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FOR *a number of years* The Month at Goodspeed's—*an engagingly written and attractively printed little journal—has brought news of books and manuscripts to the customers of the bookshop at* 18 *Beacon Street, Boston, that was founded early in this century by Mr. Charles E. Goodspeed, a valued contributor to the* NEPTUNE. *Quite apart from any questions of buying or selling books,* The Month *is always worth reading both for its sprightly style and the information that it contains. The latest issue (volume XVIII, number* 2*), which arrived just as the present* NEPTUNE *(containing Dr. David B. Tyler's 'Fulton's Steam Frigate') was going to press, deserves especial mention for the Robert Fulton documents described in it.*

Dr. Tyler, on page 253*, mentions the various names given to the steam frigate—the* Floating Battery, Steam Battery, Fulton, Fulton Steam Frigate, Demologos, Fulton the First. *Among the letters published in* The Month at Goodspeed's *is one of* 23 *September* 1814 *from Robert Fulton to Commodore David Porter, which adds still another name to the list. 'On my return to town yesterday I received your letter of* 15*th inst. It gives me great pleasure to hear of your appointment to command the* Nondescript *for she has not yet an appropriate name.*

Should war continue one year I am certain you will give her one which shall be long celebrated; As to a mere appelation we will decide on something musical when you arrive.'

Since 1942 *various installments of 'The Later History of American Sailing Ships "Sold Foreign"' have appeared in the Notes section of* THE AMERICAN NEPTUNE. *The Editors regret to announce the death on* 1 *August* 1946 *at Leigh on Sea, Essex, England, of Daniel R. Bolt, the compiler of these summaries. His enthusiasm arose from his father's having commanded American-built vessels that had passed into British hands. A few notes of his are still on hand for future publication.*

With the completion of the sixth volume, for which a general title-page and table of contents appears at the end of this issue, the Editors make their annual request for prompt renewal of subscriptions and repeat their suggestion of former years that the gift of subscriptions to THE AMERICAN NEPTUNE *is a painless manner of attending to Christmas shopping at pre-war prices.*

The Spanish Treasure Fleet of 1551

BY ROBERT S. CHAMBERLAIN

STORMS and misfortunes beset the Spanish fleet which, under command of the experienced Captain General Sancho de Viedma, carried the bullion from the Indies to Castile in 1551.[1] The voyage was adventuresome, even though the armada did not have to meet the enemy attacks for which it was prepared. Three great galleons were lost. One of these was a flagship, or *capitana*, and another was the vessel that had carried Luis de Velasco to the port of Vera Cruz to replace Antonio de Mendoza as Viceroy of New Spain.

The long voyage of this fleet across the Ocean Sea, as the Spaniards called the Atlantic, illustrates the courage and seamanship called forth from officers and men alike by a crossing in the sixteenth century. Hurricanes, treacherous winds and currents, reefs, and fire at sea were some of the hazards they had to meet.

Because of the Hapsburg-Valois Wars, which were about to break into full fury once again, it was expected that the armada might well encounter corsairs or French fleets, and therefore special precautions were ordered. Also, because of the exceptionally pressing needs of the King-Emperor Charles V for funds to support his imperial policies, it was ordered that the treasure fleet should be sent to Castile with all speed, as well as with all security.

The armada, as it finally returned to Castile, was made up of eight ships from New Spain and seventeen from Tierra Firme, or Panama.[2] Sancho de Viedma had brought a fleet from Castile to Tierra Firme, in 1550, and sailed from there to Havana, where the ships from New Spain joined him. There were about three thousand men-at-arms aboard the

[1] Documents concerning the Bullion Fleet of 1551 from New Spain: Letter of the Viceroy and *Audiencia* of New Spain to the Crown, City of Mexico, 29 October 1550, Archivo General de la Nación, México, Reales Cédulas, Tomo I.

[2] Officials of the *Casa de la Contratación de Sevilla* to the Crown, Seville, 13 June 1551, Archivo General de Indias de Sevilla, Indiferente General, Legajo 2000: . . . y asy es entrado enl rrio con las otras ocho naos del armada y diez e siete de flota. . . .

fleet when it returned,[3] and all the ships were well equipped with artillery and carried full crews. There were also a number of passengers. The fleet was laden with a great amount of gold and silver from Peru, New Spain, and the Central American provinces. This treasure, although consisting principally of the royal *quinto* (the fifth of all precious metals that by law belonged to the Sovereign) also included the proceeds of the *almojarifazgo*,[4] or import and export duties of the New World, as well as the bullion and merchandise of private citizens.[5]

The fleet was especially prepared under a royal *cédula*, or decree, of 9 January 1550.[6] Over and above requiring that all ships be fully manned and well provided with artillery, this decree directed that, if there seemed to be danger of attack by the French, the ships from Tierra Firme and New Spain should without fail unite at Havana and sail on to Castile together, under command of Sancho de Viedma, so that the bullion would safely reach the royal coffers. Although it was expected that it would be necessary for the two fleets to unite at Havana for security, if the sea was reliably reported clear of enemies, the commander of the ships from New Spain was permitted at his discretion to sail on from Havana alone, since the need of funds for the royal treasury was urgent.[7]

The gold and silver had been brought to Tierra Firme from the great and wealthy Viceroyalty of Peru by *Licenciado* Pedro de la Gasca, who, with exceptional powers from the Crown, had recently put down Gonzalo Pizarro's dangerous revolt and had set Peru in order.[8] In Tierra Firme, after having been carried across the Isthmus, this bullion was placed in charge of the commander of the fleet. Sancho de Viedma sailed from Tierra Firme with eighteen or nineteen ships and made the voyage up to Havana without notable incident.

The fleet from New Spain, made up of nine ships,[9] gathered at San

[3] *Probanza* of Merits and Services of Pedro de Casa de Avante y Gamboa, Santiago de Guatemala, 1561, A.G.I., Guatemala, Legajo 52.

[4] Documents concerning the Bullion Fleet of 1551 from New Spain, A.G.N., Reales Cédulas, Tomo I.

[5] Cf. 'Relación de lo sucedido al Galeón *San Miguel*, uno de los de la Flota del Adelantado D. Francisco de Montejo, que salió de San Juan de Ulúa para España,' in José de Rújula y de Ochotorena and Antonio del Solar y Taboada, *Francisco de Montejo y los Adelantados de Yucatán* (Badajoz, Ediciones Arqueros, 1931), pp. 371-377. This document is from the Archivo General de Indias de Sevilla, Patronato, Legajo 257-2.

[6] See documents concerning the Bullion Fleet of 1551 from New Spain, A.G.N., Reales Cédulas, Tomo I.

[7] Ibid.

[8] *Probanza* of Pedro de Casa de Avante y Gamboa, Santiago de Guatemala, 1561, A.G.I., Guatemala, Legajo 52: . . . llegado el dho po de Casa de Avante al dho puerto de la havana hallo . . . la armada rreal de su magt del peru y nueva espana con parte del thesorero que trayan dl licendo de la gasca. . . .

[9] 'Relación de lo sucedido al Galeón *San Miguel*' . . . , Rújula and Solar, loc. cit.

Juan de Ulúa, the port of Vera Cruz, founded by Hernán Cortés as the first Spanish municipality on the northern mainland. The Crown had directed that, if there appeared to be danger from enemies, enough ships should be added to the fleet from New Spain, and more men-at-arms and artillery should be provided to assure a safe voyage. The new Viceroy, Luis de Velasco, had informed his predecessor, Antonio de Mendoza, and the *Audiencia* of New Spain that there was no news of enemies between the New World and the Azores, and they therefore considered the fleet they had prepared at Vera Cruz sufficiently strong in ships, men, and armament.[10]

Francisco de Montejo, *Adelantado* of Yucatan, and former governor of Tabasco, Chiapas, and the combined province of Honduras and Higueras, was appointed Captain General of this fleet by the Viceroy of New Spain, and was assigned complete naval and maritime authority over the crews and passengers.[11] Before the fleet sailed from San Juan de Ulúa, Montejo and the *Alcalde Mayor* of Vera Cruz were to inspect the ships and their complements, and the *Alcalde Mayor* was to exact an oath of obedience to Montejo from officers, men, and passengers alike. Montejo was to select the best, most completely manned, and most heavily armed ship as his *capitana*, or flagship.[12]

Montejo was to turn the gold and silver of New Spain over to Sancho de Viedma at Havana, unless the ocean was clear of enemies, and he could, without delay, continue on from the Cuban port in safety. If French fleets or corsairs appeared off Havana, and the fortifications of the city did not seem strong enough to hold them off, Montejo was to take the bullion to a safe place inland. The authorities of Cuba were to cooperate with Montejo in every way to assure the safety of the treasure. Montejo was, at least nominally, to remain in command of the ships from New Spain even after the combined fleets sailed from Havana.[14]

[10] Documents concerning the Bullion Fleet of 1551 from New Spain, Letter of the Viceroy and Audiencia of New Spain to the Crown, City of Mexico, 29 October 1550, A.G.N., Reales Cédulas, Tomo I.

[11] Documents concerning the Bullion Fleet of 1551 from New Spain: Commission given by the Viceroy of New Spain, Antonio de Mendoza, to the Adelantado Francisco de Montejo, as Captain General of the Fleet from New Spain to Havana, Cholula, 26 October 1550, A.G.N., Reales Cédulas, Tomo I.

[12] Documents concerning the Bullion Fleet of 1551 from New Spain: Instructions from the Viceroy and Audiencia of New Spain to the Adelantado Francisco de Montejo, as Captain General of the Fleet from New Spain to Havana [1550], A.G.N., Reales Cédulas, Tomo I.

[14] See Royal *Cédula* to the Adelantado Francisco de Montejo, Madrid, 12 May 1552, A.G.I., México, Legajo 2999, T. D. 1: El Principe: Por quanto por parte de vos el adelantado montejo govor de las provincias de yucatan y coçumel me ha sido hecha relacion que vos venistes a estos rreynos por captan general de las naos que estaban en el puerto de la vera cruz de la nueva españa para traer el oro y plata que en ellas venia para su magd. . . .

The selection of the *Adelantado* Francisco de Montejo to command the bullion ships from New Spain is an interesting example of the appointment to naval command of a Spanish high official whose fields were primarily military and administrative. The choice of Montejo, too, was the result of special circumstances.

Montejo was now aged, and although he had lost little of the vigor which carried him to an important place in the New World, he had just been suspended from office in Yucatan, despite a royal patent of 1526, that had made him lifelong Governor and Captain General of that province, as well as its hereditary *Adelantado*. After his suspension, he went to the City of Mexico, where he had extensive holdings, and there prepared to go to Castile to seek reinstatement by the Crown as governor of Yucatan. In view of Montejo's decision to plead his case at Court, and because of his prominent position, the Viceroy Antonio de Mendoza and the *Audiencia* of New Spain took the opportunity to select him as Captain General of the fleet from San Juan de Ulúa to Havana.[15]

Montejo sailed from San Juan de Ulúa with the treasure fleet on 15 March 1551.[16] He set a straight course for Havana, and all went well for some days. Then storms came up, and the galleon *San Miguel* suffered damage that forced her to fall behind. *San Miguel* now began a lone voyage that finally, after many vicissitudes, ended in her loss. The other ships

[15] Although Montejo, like many others of his rank, was a civil and military officer, he was by no means unacquainted with the sea. More than that, he was one of the co-discoverers of the Bahama Channel which had become the official route for the return of the treasure fleet and all other ships from the Indies to Castile.

He had been one of the moving forces in the expedition which, under Juan de Grijalva, in 1518, followed up the discovery of Yucatan by Francisco Hernández de Córdoba in the preceeding year, and discovered New Spain and explored the coast as far north as the Río de Panuco. On this expedition, Montejo had commanded a ship and the company of soldiers she carried. In like manner, he had held command under Cortés in 1519. After reaching San Juan de Ulúa, Cortés had sent him northward along the coast as commander of two small ships, with Antón de Alaminos, Cortés, experienced Chief Pilot, to search out a better harbor and a more suitable region for permanent settlement than San Juan de Ulúa. This voyage, which proved extremely hazardous, took Montejo and Alaminos as far as the Río de Panuco, where Grijalva had turned back.

It was as Cortés' representative to Court, along with Alonso Hernández de Puerto Carrero, and Alaminos as their pilot, that Montejo shared in the discovery of the Bahama Channel. Montejo and Hernández de Puerto Carrero had sailed from Villa Rica de la Vera Cruz in the summer of 1519, in Cortés' *capitana*. After they had reached the north coast of Cuba, Alaminos, who had a superb knowledge of American waters, suggested they sail north from Cuba to escape possible capture by Cortés' rival and bitter enemy, Diego Velázquez, Governor of Cuba. From previous experience, Alaminos believed there was a passage between the Bahamas, or Lucayos, and the mainland. The *capitana* then entered the channel and, sometime late in 1519, made the first recorded passage. See Antonio de Herrera y Tordesillas, *Historia General de los Hechos de los Castellanos en las Islas i Tierra Firme del Mar Océano* (Madrid, 1601-1615), Decada II, Libro VI, Capítulo XIV: Royal *Cédula* granting a new Blazon of Arms to Francisco de Montejo, 8 December 1526, A. G. I., Indiferente General, Legajo 421.

Later, in 1527, Montejo had taken his own flotilla of four vessels from Seville to Santo Domingo, and then to Yucatan, to begin the conquest of that province. After that, he was at sea again on a number of occasions, and several times prepared flotillas for his various expeditions of conquest.

[16] 'Relación de lo sucedido al Galeon *San Miguel* . . . , Rújula and Solar, loc. cit.

from New Spain reached Havana safely, and joined with Sancho de Viedma's fleet from the south. Although now united under Sancho de Viedma's supreme command, the two fleets were to retain their separate identities as squadrons of a combined *armada*. Apparently there was either news that enemy ships were active, or the fleets from New Spain and Tierra Firme arrived at Havana at about the same time, for there seems to have been no intention on Montejo's part to continue on to Castile independently of Sancho de Viedma.

At Havana, Montejo placed the treasure and royal revenues with which his ships were laden in Sancho de Viedma's charge. Thereafter, although he would nominally remain in command of the fleet from New Spain, he was no longer responsible for the bullion.

Another ship came up to Havana from Central America, with the gold, silver, and royal revenues of the district of the *Audiencia de los Confines*. This lone vessel apparently sailed either from Trujillo or Puerto de Caballos, in Honduras. Pedro de Casa de Avante y Gamboa, in charge of the treasure, placed the bullion in Montejo's hands at Havana, and Montejo in turn, gave it into Sancho de Viedma's charge, along with that from New Spain.[17] It is not clear whether the ship from Central America was made a part of the united fleets for the voyage to Castile, or whether her rich cargo was transferred to another vessel. However, it seems probable that she went on with the *armada*.

The original Contador, or Auditor, of Sancho de Viedma's fleet, Jofre de Goicolea, who was to have served in that capacity for the entire *armada* after it sailed from Havana, died at the Cuban port. Sancho de Viedma then appointed Casa de Avante Contador in Jofre de Goicolea's place.[18] Casa de Avante declares that Montejo brought 250,000 pesos in gold and silver, and that he himself had brought up from Central America some 60,000 pesos of gold and silver, and in addition, 5000 *castellanos* in royal revenues over and above the *quinto*.[19]

The officer responsible for *San Miguel*, the galleon which had brought Luis de Velasco to replace Antonio de Mendoza as Viceroy of New Spain, has left a graphic account of all that befell after she dropped behind the other ships from New Spain on the voyage to Havana.[20] He tells that, over

[17] *Probanza* of Pedro de Casa de Avante y Gamboa, Santiago de Guatemala, 1561, A.G.I., Guatemala, Legajo 52.

[18] Ibid.

[19] Ibid. The writer does not have available the official record of all the bullion and other royal revenues the fleet of 1551 carried.

[20] This citation, which also stands for the entire account of the harrowing voyage of *San Miguel* which follows, is to the 'Relación de lo sucedido al Galeón *San Miguel*' . . . , Rújula and Solar, loc. cit.

and above her company of soldiers and crew, *San Miguel* carried a number of passengers, men, women, and children, and that she was laden with a great amount of bullion, beside merchandise. There was also a personage of importance on board, Don Pedro de Castilla, whom the officers of the ship invariably consulted, and who seems to have had a great measure of authority, either because he was a person of rank, or, because he was in command of the company of soldiers *San Miguel* carried.

When the fleet was a week out of San Juan de Ulúa, on Palm Sunday, a heavy storm came up. *San Miguel* lost her foremasts and bowsprit, and began to take water. The damage was repaired, however, and she went on with the other ships.

A day or two later, the fleet ran into a much heavier storm, and this time *San Miguel* received 'much greater harm and took a great deal of water.' The fleet now ran before the storm, but *San Miguel*, with her damaged masts, fell far behind. That night no signal lantern from the *capitana* was seen by which *San Miguel* could set her course, although a constant watch was kept. Neither were *San Miguel's* signals to the *capitana* to stand by and wait seen from the flagship. *San Miguel* dropped back farther and farther. Consequently after watching all night in vain for a signal from the flagship, those in *San Miguel* could see nothing of the *capitana*, or any other ship, when morning came.

The galleon now set her lone course for Havana, and came close enough to Cuba to sight land, when, in the words of the officer in charge: 'on the next day a south-southwest wind came off the land . . . and we went about from one course to another, because of the light wind and many currents which flow from there into the Bahama Channel, which are well known. . . .' These currents were so strong that, despite the fact that 'one day we recognized land about La Habana, although very distant, it was not possible to reach it because of the [south-southwest] wind, and we continued sailing about from one quarter to another.'

Not long after, those in *San Miguel* 'woke up among the shoals of the Channel, which are called those *de Tierra*, between the Lucayos and the Island of Cuba.' The pilot 'was going to drop anchor to await favorable winds to sail to La Habana, but because of the many shoals . . . and the danger to us while we were among them, it was agreed between the . . . pilot, and master, and sailors, and passengers, and with the consent of Señor Don Pedro [de Castilla], that we should enter the Bahama Channel and sail to Castile, since we had been so blown about and the wind was contrary for La Habana and good for Spain.'

Provisions and water supply were then carefully checked, and it was found that there were 'forty full casks of water and more than enough supplies for four or five months.' Therefore, 'in accordance with the will of all, we entered the . . . Bahama channel, and sailed on our course for Spain.'

San Miguel had no sooner begun the passage of the Bahama Channel, when 'the wind turned contrary for Castile, since it was a breeze which turned us back on La Habana, and we believed we would be there within some days.' Next day, nevertheless, 'we woke up to find ourselves close to Los Martires, which is at the entrance of the . . . channel, and then the south wind which we first had came on us again, and so that we would not be lost on the coast of Los Martires, since the . . . south wind is capricious, as is well known, we turned once more on our voyage to Castile.'

San Miguel now made the passage of the Bahama Channel with no untoward events, but 'five or six days after we were out of the channel, a very violent hurricane storm from the east-southeast struck us, and the sea forced us to turn back, since it was contrary for Spain.'

The master and pilots of *San Miguel* feared attempting to beat their way back through the Bahama Channel because of shoals and reefs, and did everything they could to avoid entering it from the north. The galleon, too, was taking a heavy pounding, and was suffering greater damage and taking more water all the while, for 'with such ruinous weather, the ship labored heavily, since . . . the main course was kept set for balance because the weight of the cabins and poop deck created very heavy rolling, which opened up the galleon, springing all the timbers, so that we found so much water [in her] that we almost could not control it with our two pumps from one watch to another, even though we threw out fothering gear and took other remedial measures. . . .' [21]

The hurricane lasted 'three days with their nights,' and *San Miguel's* plight rapidly became worse, since 'with the said storm all the poop deck and cabins which were under it . . . were broken up and carried away into the sea, and two great pieces of artillery, a *pasamuro* and a lombard, and cases and many other things which were in the cabins were lost overboard, which caused the ship to roll very heavily, and opened her [further] . . . , so that the rudder broke a fathom from its head, causing us [more] great expenditure of effort. . . .'

After the hurricane had blown itself out, the officers of *San Miguel,* 'seeing that we were without masts and without a rudder,' were certain that

[21] The writer is indebted to Dr. Vernon D. Tate of The National Archives for the translation of technical terms included in this paragraph.

she could not remain afloat much longer. Therefore, in view of the perilous situation, and 'since on the day the storm came, because of the heavy rolling, we threw a number of water casks overboard by order of Señor Don Pedro [de Castilla],' those aboard now wished to find land wherever they could. Then 'with all in agreement, it was decided that we would go to the first land [we found], even though it was uninhabitable, because of the extreme necessity of saving our lives.'

San Miguel was kept afloat only by unceasing work at the pumps, and 'in this manner we sailed many days, the passengers working the pumps by day and the seamen at night. . . .'

Officers, crew, and passengers alike were encouraged with their successful efforts to keep the great galleon afloat, and, after making such repairs as they could, they decided to try to make the island of Santo Domingo, where the bullion for the royal treasury would be safe, by working down outside the Bahamas. Thus, 'with things going so well, it was agreed that we take the ship to Santo Domingo, or Puerto de Plata, where the ship could be repaired to continue the voyage, if it could be done. And thus it was done, through sailing always close to land, so that if the water in the ship rose too high, we could run her ashore, and always following along the Lucayos, . . . taking our latitude each night and plotting our bearings. . . .'

In this way, feeling her course down outside the Bahamas, *San Miguel* finally arrived at a point the officers knew, the shoals and reefs of Abre Ojo, or Watch Out, not far off the northern coast of the island of Santo Domingo, where the ship ran into further serious trouble. As the account of the voyage goes:

> through our bearings, we came to find ahead of us the shoals which are called Abre Ojo, and believing them to be such, we began to cross them to sail to Española or Puerto Rico, and sailing on, one day, 29 April, at the hour of vespers, without sign or trace of a reef, we struck [the shoals] of Abre Ojo, at their eastern point; so that the ship received five or six very great blows, but as it was the end of the reefs, we got off, following the same course along which we had come, without making any change whatsoever. . . .

Although *San Miguel* got off the reefs of Abre Ojo, she had finally received her death blow, and her officers would have placed all the crew and passengers in the small boats and abandoned her had it not been for Pedro de Castilla, who insisted that every possible effort be made to keep her afloat until she reached the island of Santo Domingo, so that the royal revenues could be saved.

The account continues:

the blows she received opened the ship in such a way that immediately that it happened, before two Ave Marías could be said, the water was half an *estado*[22] above the steps of the masts, which are below everything else, and from that time on until we reached land, we never left the two hand pumps. All the while, the water rose higher, until when night fell there was an *estado* of water. Seeing that we were in such great peril, we agreed to put out the small boat and launch to save ourselves in them. As we were about to abandon the ship, the pilot said that the Señor Don Pedro [de Castilla] disapproved, and that he held we should man the pumps without once taking our hands off them, because if we abandoned her all would be drowned. He declared that if we could keep the pumps going without ceasing, he would bring us to land in the morning, not far away. And thus we went the whole night, with insupportable efforts. The water rose constantly, until it reached the second deck, so that all the water casks and boxes which were below were floating.

With *San Miguel* settling lower and lower each minute, and with every one aboard losing hope, the next morning

we sighted land, about three or four leagues away, and with the revived spirits that seeing [land] gave us, we kept the ship up a long time, until we arrived at it, about ten in the morning, and ran the ship ashore on a sandy beach where it seemed to us we could save the people. [This beach] was close to the cape they call [Cabo] del Carbón, ten or fifteen leagues from Puerto de Plata. As soon as we ran ashore, all the people were put on land with very great effort. . . .

The officer in charge of *San Miguel*, and probably others of the ship's complement, swam ashore after the others had been taken off.

San Miguel, after six weeks of encounters with most of the dangers the sea had to offer, had reached the end of her perilous voyage, and almost miraculously no one had been lost. But there were still trials for her people, for she had been run ashore on an unpopulated stretch of the coast. There was need for food and help, especially for the women and children. Also, there was the bullion to guard, and eventually to take off the wrecked ship.

It was therefore decided that the launch should be sent to Puerto de Plata to obtain help from the authorities of that town, and that Pedro de Castilla should go there overland with fifty or sixty of the soldiers. Meanwhile, the ill and weak, and the women and children, were to remain at the scene of the wreck until aid could be brought.

The master, pilots, and a group of seamen, fourteen in all, proceeded to Puerto de Plata in the launch, where they informed the authorities of their misfortunes and asked help for those who had been left behind, and

[22] An *estado* is 1.85 yards.

aid for Pedro de Castilla and his company who were coming overland. Report of the disaster was sent immediately to the *Audiencia* of Santo Domingo, and the officer in charge of *San Miguel* took the necessary steps to relinquish responsibility for both the wrecked ship and the bullion she carried for the royal coffers.

The *alcaldes* and other officials of Puerto de Plata immediately sent a caravel which was in the harbor with supplies for those who remained at the scene of the wreck. Francisco de Caballos, a citizen of Puerto de Plata and a Royal Treasury Official, sailed in this caravel to safeguard the bullion, as his office required. At the same time, one of the *alcaldes* set out by land with supplies and horses to aid Pedro de Castilla and his men. This *alcalde* found the group who came overland, and gave them much needed help. They reached Puerto de la Plata five or six days after they had set out from the scene of the final wreck of *San Miguel*. Pedro de Castilla and his men 'were all alive, . . . but were dying of hunger and were exhausted . . . ' by their rough march. Meanwhile, those left behind had been well taken care of by the supplies sent on the caravel.

Most, if not all of the bullion, also, was eventually saved. Seamen of *San Miguel* had taken off nine boxes of silver by the time Caballos arrived on the caravel from Puerto de Plata, and by 22 July, over 31,000 *pesos* had been recovered. This bullion was taken to the City of Santo Domingo, and placed in charge of the *Audiencia*.

While *San Miguel* was braving the dangers of the sea, the united fleets from Tierra Firme and New Spain reached Bermuda without recorded misadventures. At Bermuda, the *armada* apparently halted for a time. Then, it was caught in a storm and the *capitana* went down. Although this *capitana* was apparently Montejo's ship, Sancho de Viedma seems to have been aboard her at the time, rather than on his *almiranta* of the combined fleets. Although the *capitana* went to the bottom, 'it pleased God that, because of good diligence, everything aboard was saved, except some pieces of artillery. . . .' Thus the officers, soldiers, and ship's complement, and the bullion, were taken off in time.[23]

Casa de Avante, *Contador* of the fleet, writes of the loss of the *capitana*:[24]

> . . . the *armada* being in the anchoring place of Bermuda, it happened that the . . . General Sancho de Viedma, who was on the *capitana*, had to leave her behind . . . , and he sent Casa de Avante with a small boat from the *almiranta*, ... He went to the . . . *capitana* immediately, as the *General* told him to do, and took charge of thirty-one

[23] *Probanza* of Pedro de Casa de Avante y Gamboa, Santiago de Guatemala, 1561, A.G.I., Guatemala, Legajo 52.

[24] Ibid: . . . siguiendo su viaje la dha armada estando en el paraje de la birmuda. . . .

cases of gold and silver of His Majesty, because the ship was going to the bottom, and he took great care of [this gold and silver]. . . .

The loss of the third galleon was much more spectacular and costly, and occurred only fifteen leagues out of San Lucar de Barrameda, where the fleet was to cross the bar to move up the Guadalquivir to its final destination, Seville. Here fire swept the ship and reached the magazines, causing many deaths and the loss of everything the vessel carried, despite determined efforts to aid her.

The officials of the *Casa de la Contratación*, the agency of royal government which controlled all trade and shipping to and from the Indies, reported the catastrophe to the Crown in the following words:[25]

> . . . arriving fifteen leagues from San Lucar, another ship . . . , of which [a certain] Azola was master and owner . . . [burned]. A cabin-boy going below deck to the place where the food was stored, carrying a lighted candle, set fire to some mats, and the fire spread to the powder. So great was the impetus of the fire that it extended in a great blaze throughout the entire ship. Even though the other ships of the fleet came up, putting out all their small ships and coming alongside, it was not possible to save anything, except a few men who threw themselves into the water. . . .

The other ships, 'seventeen of the *flota* and eight of the *armada*,' crossed the bar at San Lucar de Barrameda at noon of 12 June 1551, completing their long voyage across the Ocean Sea. There, Sancho de Viedma and his ranking officers inspected the men-at-arms before any of them were permitted to go ashore, preparatory to their release from service.[26]

At least part of the treasure was transferred to small brigantines at San Lucar de Barrameda and rushed to Seville, where it was placed in the hands of the officials of the *Casa de la Contratación*.[27] Whatever part of the bullion was not sent on ahead in these smaller ships was turned over to the officers of the *Casa de la Contratación* as soon as possible after the fleet beat its way up the Guadalquivir to Seville.

The mission completed, and the bullion and other royal revenues safely in the royal coffers, the arms, munitions and artillery which the masters of the privately-owned ships had received for the voyage were turned back to the royal government.[28]

In this manner, although the *armada* did not encounter corsairs or

[25] Officials of the *Casa de la Contratación to the Crown*, Seville, 13 June 1551, A.G.I., Indiferente General, Legajo 2000.

[26] Ibid.

[27] *Probanza* of Pedro de Casa de Avante y Gamboa, Santiago de Guatemala 1561, A.G.I., Guatemala, Legajo 52.

[28] See Officials of the *Casa de la Contratación to the Crown*, Seville, 13 June 1551, A.G.I., Indiferente General, Legajo 2000.

French fleets, as had been anticipated, three great ships succumbed to the normal hazards of the sea. These losses and the conduct of those aboard the wrecked ships and the other vessels of the *armada*, demonstrate the skill, fortitude, and courage demanded of the officers and men of Spain when their country was, at one and the same time, the great power both in the Old World and the New.

Fulton's Steam Frigate

BY DAVID B. TYLER

THIS extraordinary vessel, a military secret in 1814, is only vaguely remembered today. She was the first steam vessel of war; but never fired a shot in anger. She dwarfed the steamboats of her day, but could barely stem the current of the Hudson River. She aroused the anxious curiosity of all maritime nations; yet no nation, including our own, ever copied her design. One of the last and most ambitious creations of that most ingenious and industrious inventor, Robert Fulton, she was, also, one of the causes of his untimely death.

The main facts about this vessel are recited in most naval histories and biographies of Fulton. However, the circumstances which brought about her construction, the reasons for her peculiar design, and other related matters are less well known. They are interesting in themselves and they deserve a place as a foot-note to the history of the War of 1812.

Historians refer to her as 'the *Demologos* or the *Fulton the First*.' They never explain why she had two names, beyond some unfounded statement to the effect that she was launched as the former and sometime afterward changed to the latter. A little research into contemporary accounts makes it clear that she was never, during the time of her construction and use, referred to as *Demologos* and, only occasionally, as *Fulton the First*. She was usually designated the *Floating Battery*, *Steam Battery*, *Fulton*, or, officially, as the *Fulton Steam Frigate*.[1]

The only contemporary use of the name *Demologos* that this writer has been able to unearth is to be found at the top of the well-known plan of the vessel, dated November 1813 and reproduced here (page 255). When, in December 1813, a prospectus was drawn up for a company to build her, she was referred to as the *Pyremon*, meaning 'vomiting fire.'[2] This name,

[1] She is listed as *Steam Frigate Fulton 1st* in the report on the Naval Force, as of 1 January 1816, *Am. State Papers, Naval Affairs*, I, 380; she is listed as *Fulton Steam Frigate* in the 1822 and subsequent editions of the Navy *Register*.

[2] Historical Society of Pennsylvania, Dreer Collection, Robert Fulton Papers, 10. Hereafter cited as H.S.P., Fulton Papers.

also, does not reappear. It was probably considered too broad a hint regarding the military secret. When she was launched, in October 1814, she was called *Fulton the First*.[3] We do not know what name Fulton used when he applied for a patent in the preceding March, for his accompanying drawing and model were destroyed in the Patent Office fire. Thus it appears that historians took the name *Demologos*, which the vessel never wore, from the earliest and only surviving plan. The actual and awkward *Fulton the First* was used because there was already a steamboat *Fulton* operating on the Hudson and because this was the first steam war vessel ever built as it was, also, the first of three authorized by Congress.

As is often the case, the stimulation, needed to produce a radical innovation in naval architecture, came from the requirements of a war in progress, and the plan had a civilian origin. The restless mind, tireless energy, and soaring ambition of Robert Fulton provided the driving force for this project. He had centered his imaginative powers in the field of mechanical invention when painting failed to offer sufficient outlet or recompense. His experiments with the submarine *Nautilus* gave vent to his republican enthusiasm and inventive genius until Napoleon's increasing autocracy and disinterest brought them to an end. Next came a brief sojourn in England while he dickered with a government which had just enough faith in his torpedoes to want to keep him from returning to France. Growing weary of this 'run-around' Fulton came back to America, his native land, and, in 1807, enjoyed his spectacular success with the steamboat *Clermont*. Fulton constructed several more steamboats after this encouraging beginning and sought to secure a monopoly of their operation on the Hudson. At the same time he attempted to persuade the American government to adopt his 'system' of torpedo warfare but, beyond an appropriation of five thousand dollars for experimentation, the government gave no concrete evidence of its interest.

The outbreak of the war with England in 1812 put another face on matters. By the winter of 1813 it had become apparent that the British intended to extend their blockade of the Chesapeake and Delaware to the Hudson and Long Island Sound. The American Navy, in spite of victories in individual fights, was so far outnumbered and outgunned that it could not offer serious opposition to the blockade. Not only were the British recapturing prizes but it appeared very likely that they would make raids on strategic ports. New York was one of these ports. Although

[3] New York *Columbian*, 29 October 1814; Porter to Jones, 29 October 1814, Naval Records Collection, National Archives, *Captains' Letters* 1814, VII, 78 (subsequent references to documents in this Collection will be designated by the letters N.R.C.).

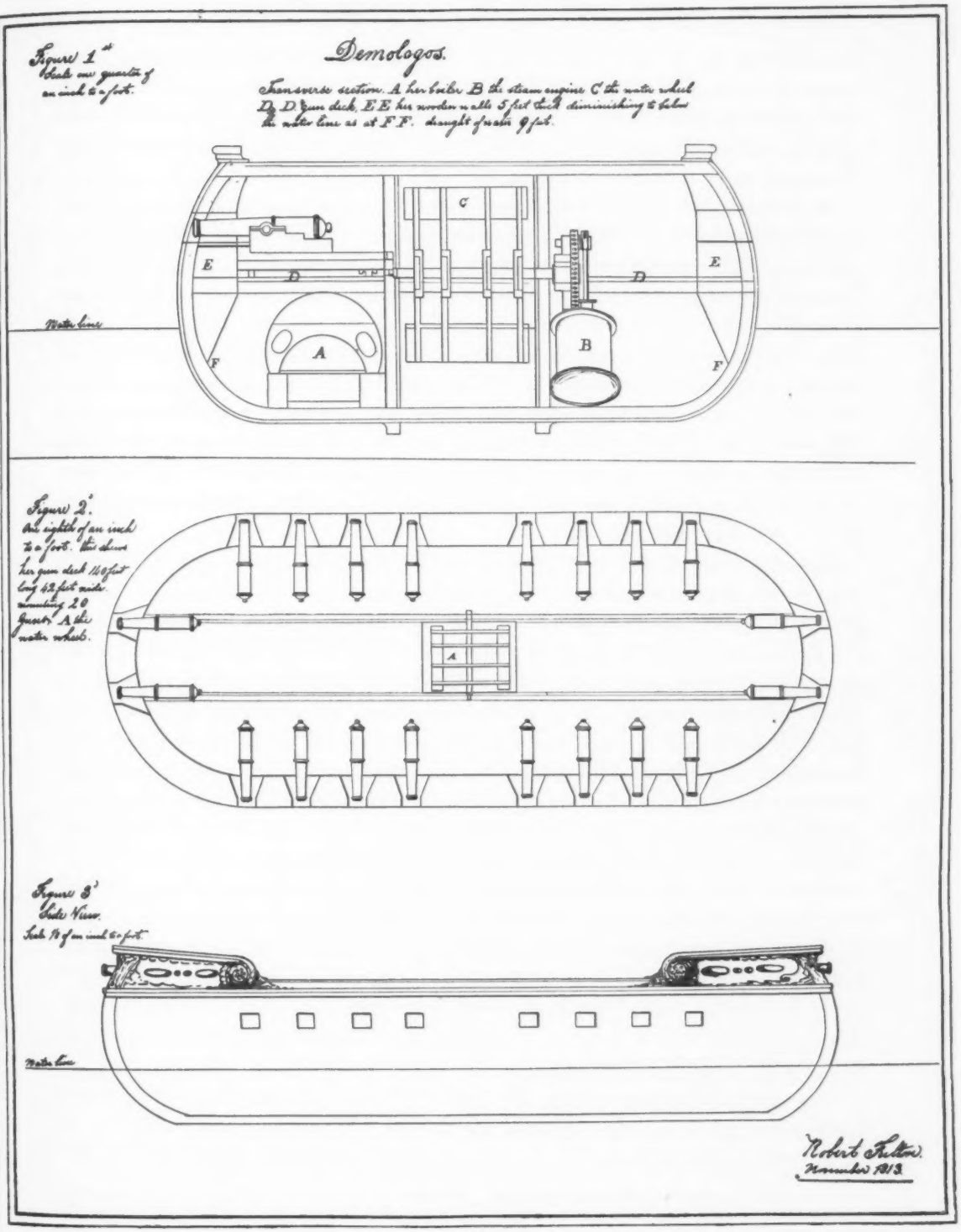


Figure 1st
Scale one quarter of an inch to a foot.
Demologos.
Transverse section. A her boiler. B the steam engine C the water wheel D, D Gun deck. E E her wooden walls 5 feet thick diminishing to below the water line as at F F. draught of water 9 feet.
C
E
D
D
E
Water Line
A
B
F
F
Figure 2d
One eighth of an inch to a foot. This shows her gun deck 150 feet long 42 feet wide mounting 20 guns. A the water wheel.
A
Figure 3d
Side View.
Scale 1/8 of an inch to a foot.
Water Line
Robert Fulton.
November 1813.

Reproduced from a tracing in The National Archives, Washington, D. C.

its citizens were split between the Republicans and Federalists and, consequently, somewhat luke-warm about continuing the war, they were, nevertheless, increasingly concerned about the safety of their lives and property. Fulton, as a patriot and as a man with an established waterfront business, gave thought to the matter of harbor defense.

It was doubtful whether existing defenses were sufficient to prevent enemy ships-of-the-line from approaching to within gunshot of the city. Attacks could be made either by way of the Narrows or by way of Long Island Sound and the East River. A floating battery, which could be shifted to the spot where it was most needed, suggested itself to Fulton. If moved by steam power it could maneuver within the confined area of the harbor, irrespective of wind and tide, and thus have the advantage of position over sailing vessels. Indeed, if the wind dropped out, they would become 'sitting ducks.' Furthermore, if a floating battery could be made safe from enemy shot and boarding parties, it could defend the harbor single-handed. These thoughts prompted the plans which Fulton put on paper in November 1813.

From his experience with ferryboats Fulton knew how to build a craft which could be made to move forward or backward by merely reversing the water-wheel. He began, therefore, by designing a large-size ferryboat on the catamaran or twin-boat principle. He reverted, in one particular, to a plan that he had contemplated when he built his first ferryboat in 1811. This was to have the inboard sides of each boat straight and parallel, forming a kind of sluice-way with the water-wheel in the center. On his ferryboat the ends of the double boats were pointed, the better to stem the tide and waves, but in the floating battery the greatest need was for plenty of space below deck. There had to be room for the engine in one boat, the boilers in the other, and for stowage of ammunition, fuel, and gear.[4]

The best protection for the engine was to keep it below the waterline but the vessel's depth was limited by the necessity of operating it in the harbor and close to shore. Part of the engine and most of the paddle-wheel had to be above waterline. Fulton's plan provided for side-walls 4′ 10″ thick, from just below the water, and for a scantling cover over the wheel. Although this added weight might make the vessel sluggish, it was considered necessary for protection.

Another military problem that had to be considered was protection from boarders. Fulton's solution was the source of most of the rumors regarding her demonic character. In the days before flame-throwers had be-

[4] Fulton's account of the Powles Hook steam ferryboat and the picture of her, reproduced here, may be found in *The American Medical and Philosophical Register* (October, 1812), pp. 198-200.

come a common-place, the threat of scalding water was sufficiently terrifying. A steam vessel would, naturally, have both hot water and pump ready to hand. The main difficulty, which was usually overlooked, was that the vessel could not move and shower the enemy with hot water at the same time.

Some of the accounts said she had her deck lined with brandishing cutlasses and her sides with stabbing pikes, all of which moved mechanically.[5] The only basis for this rumor seems to have been the placing of a series of iron stancheons on the top deck for the support of a barricade of bales of cotton.[6]

An additional terror, which Fulton talked about, was red hot shot. His intention appears to have been to use the ordinary furnace grates for this purpose. He also planned but never actually installed a 100 pounder Columbiad gun, in each of the four ends or bows, to fire underwater. He made some successful experiments firing cannon underwater and took out a patent for such a gun in 1813.

F. M. Bennett translates *Demologos* as meaning 'Voice of the People.' Fulton's liking for this name was probably his realization that popular support was needed if funds for the vessel's construction were to be found. He had had very limited success in his efforts to secure support for his experiments from governments abroad and at home. Moreover, in 1813, it was obvious that the American government was having more than it could do to support its forces along the coast and in the region of the Great Lakes. In fact, a large part of the defense of the coast was being left to the States.

Fulton arranged a meeting of some friends and certain prominent people at his house on 24 December 1813. Among them was Major General Henry Dearborn, a Revolutionary hero and former Secretary of War who, until the previous summer, had commanded forces on the Canadian frontier. His record during these recent campaigns was so poor that Secretary Armstrong had removed him to the less exacting command of the

[5] An oft-quoted description from a 'Scottish treatise' reads: 'Length on deck, three hundred feet; breadth, two hundred feet; thickness of her sides, thirteen feet of alternate oak plank and corkwood—carries forty-four guns, four of which are hundred pounders; quarter-deck and forecastle guns, forty-four pounders; and further to annoy an enemy attempting to board, can discharge one hundred gallons of boiling water in a minute, and by mechanism brandishes three hundred cutlasses with the utmost regularity over her gunwales; work also an equal number of heavy iron pikes of great length, darting them from her sides with prodigious force, and withdrawing them every quarter of a minute!' F. M. Bennett, *The Steam Navy of the United States*, 12; Decatur suggested the construction of a small craft for harbor defense with iron spikes on deck to prevent boarding and guns to fire in any direction, Decatur to Fulton, 9 August 1813, *Rosenbach Co., Catalogue* 1931, N.R.C. (AD).

[6] Described by Montgéry, capitaine de frégate, as 'des chandeliers en fer qui doivent soutenir un bastingage épais de 8 pieds, formé de balles de coton,' in his article, 'Notice sur la vie et les travaux de Robert Fulton,' in *Annales de l'industrie nationale et étrangère, ou Mercure Technologique*, 1822, p. 260.

New York District; but he was respected, his word carried weight, and his shortcomings were excused on the grounds of age.

At the meeting Fulton exhibited his model and plans and explained his vessel's potentialities. At his suggestion the assembled company formed itself into a 'Coast and Harbor Defense Company' and chose Dearborn as President, Fulton as Engineer, and Thomas Morris as Secretary. It then moved the formation of a Committee to 'obtain the patronage of the general, the State government, and of the corporation of this city, and to endeavor to raise by subscription or otherwise the necessary funds to build and equip a vessel on the plan proposed by Mr. Fulton. . . .' The Committee included, besides the three persons just mentioned, General Morgan Lewis, Commodore Stephen Decatur, Isaac Bronson, Cadwallader D. Colden, John G. Bogert, Nathan Sandford, Samuel L. Mitchill, Jacob Lewis, Henry Rutgers, Oliver Wolcott, Adam Brown, John R. Livingston, and William Edgar, Jr.[7]

Several of these people were well-known in both city and federal government circles. The Navy was represented by Decatur, at that time in command at New London, and Commodore Jacob Lewis, who commanded the flotilla charged with the defense of New York harbor. Wolcott was a former Secretary of the Treasury while Mitchill was a leading scientist who had done advisory work for the Navy. Colden and Livingston were Fulton's friends and business associates and Adam Brown was a well-known shipbuilder. Henry Rutgers, a wealthy and much respected citizen, had been selected chairman of a meeting of citizens in City Hall Park in June 1812 which had passed resolutions supporting the government's action in beginning the war.[8]

The Committee's first meeting was on 27 December at the house of General Dearborn. Those present, besides the President, were: Bronson, Fulton, Mitchell, Sandford, Brown, and Morris. They decided to prepare subscription papers for a Company whose stock should consist of 1500 shares, each worth one hundred dollars. It was estimated that the steam vessel would cost $110,000. The remuneration 'will be in producing a useful work and a new art in war. In protecting our city, families and property. In successful attacks on the enemy and the *reward allowed by government*[9] for capturing or destroying vessels of superior or inferior force.'[10]

[7] H.S.P., Fulton Papers, 5-6.

[8] Rutgers to Madison, 25 June 1812, Madison Papers, Vol. 48, Library of Congress.

[9] Italics are their own.

[10] H.S.P., Fulton Papers, 7-9.

The following proposition was to be made to the government: if they built this vessel of 130′ length, 50′ beam, and capable of moving 5 m.p.h., without aid of wind or tide and capable of carrying 24 eighteen pounders, the Government should pay 'the first cost and fifty per cent advance' and acquire her as its own property.[11]

The Company should be called 'The Coast Defense Society' and its vessel *Pyremon*. Dearborn remained as President, Fulton as Engineer and the Committee was reduced to the following names: General Lewis, Sandford, Bronson, Col. Rutgers, Astor, Morris, and Wolcott.[12]

Immediate efforts were made to sell the idea to the government. Much as the members of the Society might desire a more adequate defense of the harbor they were reluctant to venture their own funds on the slim chance of getting it back in prize money. Indeed, the vessel itself might be taken as a prize before her completion. Furthermore, at this juncture of the war there were rumors of impending peace through the mediation of the Russian government, the ally of England against Napoleon.

Fulton, impatient of delay, sought the support of Secretary of State Monroe. 'The President, you and Mr. Dallas,' he said, 'can in an hour order all the money arrangements with Treasury Notes. I now give you every moment of my time and industry. . . . I believe you feel it as I do and hence I will hope for all your influence and aid.' [13] But the testimony which carried the greatest weight with the government and with popular opinion was a statement dated New London, 3 January 1814 and signed by seven naval officers. This document, bearing the signatures of Decatur, Jacob Jones, J. Biddle, Samuel Evans, O. H. Perry, S. Warrington, and J. Lewis, is worth quoting in full:[14]

> We the undersigned have this day examined the Model and Plan of a vessel of War submitted to us by Robert Fulton, to carry 24 guns 24 and 32 Pounders, and use Red hot shot. To be propelled by steam from Four to Five miles an hour, without masts or sails, she can move with sufficient speed, her machinery being guarded she cannot be crippled, her sides are so thick, she is impenetrable to every kind of shot, in a calm or light breeze she can take advantage of a position, or distance from the enemy. Considering the speed which the application of Steam has already given to floating bodies, we have full confidence, that should such a vessel move Four Miles an hour, she could, under favourable circumstances which may be always gained over our enemies' vessels in our Ports, Harbours, Bays and Sounds be rendered more

[11] Ibid., 10.

[12] H.S.P., Fulton Papers, 11; in his acknowledgement of Fulton's letter describing their plans Decatur suggested a simple mode of defense from boarders 'to wit: an iron-rail of two inches in diameter to run round the vessel close down to the water's edge, supported from the vessel's sides; no boat could then get alongside,' Decatur to Fulton, 31 December 1813, H.S.P., Fulton Papers, 12.

[13] Fulton to Monroe, 4 January 1814, Ibid., 33.

[14] N.R.C. (AD).

formidable to an enemy than any kind of an Engine hitherto invented and she would be equal to the destruction of one or more Seventy-fours, or compel them to depart from our waters. We therefore give it our decided opinion, that it is among the best interest of the United States to carry this Plan into immediate execution.

Commodore Jacob Lewis brought the matter to the attention of Secretary of the Navy, William Jones, whose chief concern at the moment was the building and outfitting of vessels at Sackett's Harbor and on Lake Champlain. Lewis wrote Fulton that the Secretary was very interested in the project, to which the inventor replied urging that 'Time, Time is all important none should be lost. I should now be at work. Let the government find the funds give the order and hundreds of hammers and hatchets shall instantly be at work. June or July shall see her glide forth from our waters in all her terrors.' [15]

Fulton should have realized by this time that the wheels of government would not move that fast at his bidding. But the portents were favorable. When the plans and a copy of the letter of testimony were sent to Henry Clay he forwarded them to Lowndes, Chairman of the House Naval Affairs Committee, and assured Fulton that 'before and since the arrival of Commodore Lewis, the subject has attracted much attention. . . . And I have not a doubt of Congress making provision for testing by fair experiment, its value, when the subject is brought before them. This I understand will be speedily done, if the Executive determine their powers incompetent to adopt the engine.' [16]

Secretary Jones endorsed the project whole-heartedly in a communication to Lowndes dated February 2nd. 'Indeed,' he said, 'it can scarcely be considered as an experiment, because all the principals which enter into its construction are perfectly demonstrated and reduced to practice and only require combination to produce the desired effect with certainty.' Proof from shot and boarders and able to exchange hot shot for cold, she would be propelled by steam 'an Agent with which all are now so familiar in Navigation, that it is matter of surprize how Scepticism could have continued so long.' He recommended its adoption without hesitation and added that 'if practicable, it is very desireable to accomplish the object in the manner suggested by the Committee, so as to avoid the inconvenience of a detailed and public development of the subject. . . .' [17]

In pursuance of this latter object and upon the request of John Gaillard, Chairman of the Senate Naval Affairs Committee, Jones prepared

[15] Fulton to Lewis, 26 January 1814, N.R.C., *Miscellaneous Letters*, 1814, I (85).

[16] Clay to Fulton, 27 January 1814, H.S.P., Fulton Papers, 14.

[17] Jones to Lowndes, 2 February 1814, N.R.C., *Congress* II, 209-210.

the draft of a bill intended 'sufficiently to designate the object without developing the principle, of the proposed steam vessel of War. . . .' The proposed bill called for a sum of $250,000 for the construction and equipping of a 'floating battery of such magnitude and construction as shall appear to the President of the United States best adapted to attack and repel or destroy any of the ships of the enemy which may approach the shores or enter the waters of the United States. . . .' [18]

When Gaillard submitted the bill to the Senate on February 10th the same wording was used except that the amount was increased to $500,000 and the bill now called for 'one or more' floating batteries. It was passed without discussion on the 15th, went to the House Naval Affairs Committee on the 16th, and was reported by Lowndes on the following day. Brought up, on the motion of Lowndes, on 4 March, it passed a second reading, after a brief discussion, by a vote of 82 to 44. It was passed again the next day without opposition and was approved on the 9th.[19]

The Coast Defense Society now appointed a Committee to supervise the vessel's construction. It consisted of Dearborn, Rutgers, Wolcott, Mitchill, and Morris while Fulton continued as 'Engineer.' [20] At this time a model and drawing were submitted to the Patent Office.[21]

In response to a request from Jones, Fulton sent the following specifications: keel 120′; on deck 138′; beam 55′ (each hull 20′ beam and 15′ apart); speed 4½ to 5 m.p.h.; engine 130 h.p.; draft 8 or 9 feet to carry 24 long 32 pounders; total expense $200,000. He conceived of the vessel as having 'force to contend with a Seventy-four, and then although she cannot run into very shoal water, she can go for shelter into such waters where a Seventy-four cannot approach her; the practice then will be to move out from her harbour in cases when the Enemy are becalmed, such vessels can go coastwise from hence to any other Port.' She should be built in New York where he had his engine works 'the only good establishment for that purpose in the United States.' Time was all important, she could not be built in less than four months, 'may I hope for your immediate orders to commence?' [22]

Fulton was disappointed in this for Jones, although he liked the project, had no funds to draw upon.

[18] Jones to Gaillard, 9 February 1814, N.R.C., *Congress* II, 220.
[19] *Annals of Congress*, 13 Cong., 2 Sess., Part 2, Vol. 27, Appendix 2799-2800.
[20] H.S.P., Fulton Papers, 21.
[21] 27 Cong., 2 Sess., *House Report* 588, pp. 5-6.
[22] Fulton to Jones, 19 March 1814, N.R.C., *Miscellaneous Letters*, 1814, II (116½).

On 19 April the Committee sent a formal letter asking if the Secretary intended to build the battery and assured him that the 'utmost' expenditure, including armament, would not exceed $200,000.[23] Jones replied, 6 May, to the effect that he had delayed in order to give the matter mature consideration and to determine whether it would be compatible with a multiplicity of other pressing war needs. 'Under these considerations, duly weighed,' he said, 'it has been determined to postpone the execution of the law. . . .'[24] In a letter to Fulton he raised certain questions regarding the model. Did it not have too great depth, too much height above water, too thick sides, and were the semi-circular boat bottoms necessary? 'The principles & practice of Naval Architecture,' he explained, 'having been a favorite study and pursuit, may apologize for these criticisms upon a subject, on which you have bestowed much thought. . . .'[25]

Dearborn and Fulton sought to dissuade him from this decision. The former wrote describing the disappointment of the citizens of New York and repeated a conversation with Commodore Decatur and Captain Jones in which they had spoken of the battery as a means of diminishing the risk that ships of war might pass by the harbor defenses. Fulton went into an explanation of costs. The hull by Noah and Adam Brown would cost $69,800 and the engine and machinery $78,000, making a total of $147,800. He explained that it was necessary to have boilers, air pumps, valves, screws, bolts, etc., made of brass or copper which added 59% to the cost of land engines and claimed that the usual estimates for marine engines were $500 per h.p., or $60,000 for 120 horses, as against his estimate of $50,000 for the engine alone. He defended the practicality of thick walls with consequent small cone of fire as being suitable for a vessel which could always be maneuvered into a broadside position. He also defended the semi-circular out-board and straight inboard sides of the hulls as bringing them to within 15′ of each other at the bottom, thus permitting them to be strongly tied together. By means of free-hand sketches he showed that ordinary rounded bottoms would have keels 35′ apart.[26]

Secretary Jones allowed himself to be persuaded. On 23 May he wrote Dearborn that he had decided 'to make every effort to find resources for that purpose without interfering with those expenditures which are indespensible. The Committee will therefore please to Commence the construction of a Floating Battery upon the plan and principle proposed by

[23] Dearborn and Morris to Jones, 19 April 1814, N.R.C., *Miscellaneous Letters*, 1814, IV (51½).

[24] Jones to Dearborn, 6 May 1814, N.R.C., *General Letter Book*, 1813-1816, p. 157.

[25] Jones to Fulton, 6 May 1814, N.R.C., *General Letter Book*, 1813-1816, pp. 158-159.

[26] Dearborn to Jones, 15 May 1814, N.R.C., *Miscellaneous Letters*, 1814, IV (37); Fulton to Jones, 18 May 1814, Ibid. (45½).

Mr. Fulton, and to act as the agents of this Department for that special purpose.' They should enter into such contracts as were required and draw from the Navy storekeeper or from the Commandant of the Navy Yard such stores or articles as might be on hand and be needed for her construction. He accepted Fulton's explanation of his model.[27]

The Committee agreed to accept the agency and formed a sub-committee of Dearborn, Rutgers, Wolcott, Morris, and Mitchill with Fulton as Engineer with full powers to act for the General Committee. Dearborn, 4 June, asked that $25,000 be sent immediately for deposit in a New York bank and stated that work had begun. Two days later he wrote Jones that he had been ordered to take command of the defenses of Boston and that Col. Rutgers had been appointed Chairman in his place.[28]

The launching took place 29 October, about 4½ months after the receipt of the go-ahead order. That was a remarkably short time for the construction of a hull as large and complicated as this one. Time was becoming a more important factor, for the war was coming closer. In August Washington was burned. In the following month Macdonough met and defeated the British on Lake Champlain and, at about the same time, Baltimore was attacked and successfully defended. Long Island Sound and the entrance to New York harbor were blockaded. Attack upon New York appeared to be imminent in August. At this time Rutgers again presided at a citizens' meeting in City Hall Park. On this occasion the citizens resolved to defend the city 'to the last extremity' and groups volunteered to work on the defenses being thrown up on Brooklyn Heights and in Harlem.

All the work of superintendence of construction of the vessel was done by Fulton. He had made it plain to Jones that 'the plan and mode of construction must be confided to me. In all my works on steam vessels, no one interferes with my combinations for the moving powers.' Indeed, no one on the Committee was qualified to do this work and, as the general superintendent of John Youle's foundry testified, the scarcity of workmen 'who knew how to work from drawings, was such as to require from Mr. Fulton continual exertions, night and day, in travelling from one shop to another, either to alter mistakes or prevent others; and, even after the patterns were finished, much delay and perplexity took place in casting them, that branch being then in its infancy in this country.' The cylinder was on such a large scale that there had to be several tries before a satis-

[27] Jones to Dearborn, 23 May 1814, N.R.C., *General Letter Book*, 1813-1816, pp. 170-171.

[28] Dearborn to Jones, 4 June 1814. N.R.C., *Miscellaneous Letters*, 1814, IV (87½); H.S.P., Fulton Papers, 94.

factory one was cast. Then too there were solid castings for such things as wheel pinions, beams, pinion blocks, and brass castings for valves, valve seats and gudgeon boxes.[29]

In July the Committee arranged some experimental firing of cannon at an oak target nine feet square and five feet thick. A drawing which portrayed the results was sent to the Secretary of the Navy. The Committee also worried about meeting payrolls and Rutgers bombarded Washington with requests for payments which were always lagging behind needs. Payments were further delayed when the Government was forced to flee from the capital. In spite of protests the New York banks discounted Treasury notes, thus making matters worse. In the last days before the launching the Committee was forced to advance five thousand dollars on its own account.[30]

When the timbers had been raised and they were about ready to start planking, inquisitive visitors provided a new source of trouble. The yard's ship house was occupied by a sloop-of-war nearly planked but left unfinished in order to concentrate upon the steam vessel building about twenty feet away. Rutgers explained to Jones that 'the novelty of the vessel building excites the curiosity of most people, the number is inconceivable, they interrupt the Carpenters in their duty, besides it furnishes an opportunity to our enemies of availing themselves of any plan to counteract our exertions.' He asked the Secretary's approval for a 'Sergeants guard' of militia who would have to be paid and given rations. Twenty men were required because the yard was so large and accessible from every side.[31]

Another difficulty was the scarcity of guns. Only three long 32 pounders were available at the Navy Yard. Jones promised the use of some taken off a prize at Philadelphia. The gun carriages could not be made until they arrived and, because of the blockade, they had to be brought overland.

As was to be expected, the launching was an eagerly awaited and joyous occasion. Some 15,000 spectators crowded around the ways at 9 A.M., 29 October, when the event took place. Notables crowded the steamboats *Fulton* and *Paragon* while ordinary citizens watched from the *Firefly* and the Horse-Boat *Williamsburgh* which also hovered nearby. Commodore Lewis' flotilla, dressed in colors, formed a line across the East River. After she entered the water *Fulton the First* was towed by her namesake to Ful-

[29] Testimony of Thomas Morris, 26 Cong., 2 Sess., Senate Doc. 194, pp. 12-13 and of Paul A. Sabbaton, 26 Cong., 2 Sess., Senate Doc. 193, pp. 14-15.

[30] Rutgers to Jones, 6 July 1814, N.R.C., *Miscellaneous Letters*, 1814, V (37½).

[31] Rutgers to Jones, 17 July 1814, N.R.C., *Miscellaneous Letters*, 1814, V (60½).

ton's engine works in New Jersey. David Porter, famed as commander of the frigate *Essex* and now assigned to command the steam frigate, was aboard and received three cheers as did Commodore Decatur who passed by on his barge. Salutes were exchanged with the forts and the city artillery. The newspapers explained to their readers that the new *Fulton* was the first vessel of her kind ever constructed.[32]

Captain Porter sent an enthusiastic report to Secretary Jones. He said she drew only 8′ 3″, which was about 3″ less than was expected, and should not draw over 10′ with all her guns and stores aboard.[33] In spite of his apparent enthusiasm, Porter is said to have been the one who insisted on adding sailpower to that of the engine.[34] Since it was obvious that his new command would not be ready before the ensuing spring, Porter requested and was given command of small craft to use against the enemy's supply ships in the West Indies where there was a chance to win prize money.[35] In the following March he was appointed a member of the newly-formed Board of Navy Commissioners and, as a result, never did return to the command of the steam frigate.

The effect of the launching and attendant ballyhoo was electric in certain quarters. The fact that Congress had appropriated money for more than one battery was not overlooked. Captain Stiles of Baltimore made an offer to build another for a mere $50,000 and William Cooper of Oswego repeated an earlier offer to build a floating battery 100′ long and 55′ beam 'with cast iron bulwarks and wrought iron bomb proof deck.' [36]

Secretary Jones became very steam battery conscious. He welcomed an offer from a Committee of Vigilance and Safety at Baltimore to lend the government money to build a battery in that city and instructed the Navy Agent at Philadelphia to encourage the citizens of that city to make a similar loan. There was no time to lose. The Secretary was convinced that the floating battery offered the best harbor defense and realized that such a vessel required comparatively few seamen at a time when he was finding it difficult to get enough to man his vessels.[37] The frame of a battery was built at Baltimore before the end of the war caused its suspension and, al-

[32] *New-York Gazette & General Advertiser*, 31 October 1814; New York *Columbian*, 29 October 1814.

[33] Porter to Jones, 29 October 1814, N.R.C., *Captains' Letters*, 1814, VII (78).

[34] F. M. Bennett, *The Steam Navy of the United States*, 11.

[35] Porter's memorandum to Fulton, 8 September 1814, N.R.C., *Miscellaneous Letters*, 1814, VI (78); Porter to Jones, N.R.C., *Captains' Letters*, 1814, VII (37); Jones to Porter, 30 November 1814, N.R.C., *Private Letters*, 1813-1840.

[36] Joseph H. Nicholson to Jones, 11 March 1814, H.S.P., Uselma Clarke Smith Collection, William Jones Papers; Cooper to Madison, 3 November 1814, Madison Papers, Vol. 57, Library of Congress.

[37] Jones to George Harrison, 8 November 1814, N.R.C., *Private Letters*, 1813-1840, pp. 208-209; Jones to Edward Johnson, 8 November 1814, Ibid., p. 208.

though no work was done at Philadelphia, a Committee of Defense was induced to match Baltimore's loan of $150,000.

Jones also wanted to build three batteries at Sackett's Harbor as a substitute for all or, at least, part of the force that was to have been built there. He wrote to Decatur, Governor Tompkins, Isaac Chauncey, and Fulton on this matter. They all opposed the idea, agreeing that the batteries were intended for smooth waters and would be unmanageable and unable to choose position in the ocean or broad waters of Lake Ontario where ships of the line or frigates should be used.[38] Fulton agreed, reluctantly, stating that he wanted to try his vessel out before recommending her for the Lakes. However, in his usual resourceful manner, he added that he was reflecting on the matter and 'I am about finishing the model of one to carry not more than *three* or *four* guns of heavy metal and to apply Torpedoes.' It would also be shot-proof and cost only from $50,000 to $60,000. He could finish her engine in March if permitted to begin work immediately.[39]

In a communication to Charles Tait, new Chairman of the Senate Naval Affairs Committee, Jones explained that the new steam frigate was expected to cost $200,000 and that balance of the appropriation would be used to pay for batteries to be built at Baltimore and Philadelphia. He took the opportunity to suggest the need of another appropriation of half a million to build additional batteries. A bill for this amount and the construction of one or more floating batteries was introduced in the Senate at the end of the year. It passed unopposed on 9 January 1815 but did not come up for final consideration in the House until 22 February. By that time the war had ended and further action on the bill was 'indefinitely postponed.'[40]

In the last months of the war Fulton was, if possible, busier than ever. In addition to finishing the battery at New York and attending to his multifarious steamboat interests, he began to superintend the construction of the battery at Baltimore. The government paid him $40,000 for the use of his Mississippi steamboats *Vesuvious*, *Aetna*, *New Orleans*, and *Natchez*.[41] His ideas were ever enlarging. Just as in 1809 he had suggested

[38] Jones to Decatur and to Chauncey, 8 and 16 November 1814, respectively, N.R.C., *Private Letters*, 1813-1840, pp. 207, 209; Tompkins to Decatur and Decatur to Jones, 14 and 16 November 1814, respectively, N.R.C., *Captains' Letters*, 1814, VII (135); Chauncey to Benjamin Homans, 18 December 1814, N.R.C., *Captains' Letters*, 1814, VIII (121).

[39] Fulton to Decatur, 15 November 1814, N.R.C., *Captains' Letters*, 1814 VII (135).

[40] Jones to Tait, 22 November 1814, N.R.C., *Congress*, No. 2, 1811-1818, pp. 325-326; *Annals of Congress*, 13 Cong., 3 Sess., Vol. 28, pp. 138, 1177.

[41] 26 Cong., 2 Sess., Senate Doc., 193 pp. 4-5; Fulton to Homans, 26 December 1814, N.R.C., *Miscellaneous Letters*, 1814 VIII (115).

that his friend Joel Barlow be made Secretary of the Navy so as to expedite the adoption of his 'Torpedo system,' so now, in November 1814, he wrote President Madison, as follows:[42]

> It is reported that Mr. Jones intends to resign. If so and I succeed, might I not be useful in his situation for twelve months? If I do not succeed so as to evidently establish a principle from which will emanate a new epoch in nautical affairs advantageous to our country I would by no means propose for myself a situation which requires much energy of mind and great labor. But with success I should like to have the power to organize and carry my whole plan into the most useful effect in the least possible time; for which purpose it is better to have the power to arrange and command than to spend months or years in the slow convertion of mind not occupied on; or embracing the whole subject.

He argued that the enemy, with 15,000 men, was holding some 100,000 regulars and militia on coast defense at a total cost of over nineteen million dollars whereas the cost of construction and operation of twenty steam batteries would be less than half of that amount. Furthermore, the example set by this country would cause European maritime nations to build similar vessels which, in turn, would force England to 'moderation in her demands and more equality of maritime rights. . . . Not ambitious of office I offer my services only on condition that the arts will enable me to be useful to my country.'

In December Fulton produced a model of his new inexpensive vessel for coast and lake defense. It was a modification of his old *Nautilus*, having air chambers for the purpose of submarine movement, and designed for setting off torpedoes or firing submarine guns. With her top-side barely above water she would present a poor target and would move silently. To emphasize this last quality, Fulton named his new creation the *Mute*. She was to be propelled by the crew pulling on a shaft attached to a paddle-wheel.[43] He secured testimonials from John Rodgers and Joshua Barney as well as one signed by Porter, Chauncey, Decatur, and Warrington. Backed by this array of naval names Fulton wrote Madison suggesting that fourteen of these 'bullet-proof' boats be built at various ports and ten at Sackett's Harbor at a cost of $15,000 each or a total cost of $360,000. He stipulated that they should be operated under his independent command and added that it would be well under those circumstances to grant him some such title as 'General of Aquatic Engineers.'[44]

[42] Fulton to Madison, 17 February 1809 and 5 November 1814, James Madison Papers, Vol. 36 and 57, Library of Congress.

[43] The *Mute* is described by Colden in *The Life of Robert Fulton*, 233-235.

[44] Testimonials, dated 14, 17 and 22 December 1814, N.R.C., *Miscellaneous Letters*, 1814, I (34); Fulton to Madison, 23 December 1814, N.R.C., *Miscellaneous Letters*, 1814, VI (77).

Visiting Washington early in the new year Fulton exhibited his model of *Mute* to the President, Monroe, Dallas, and Rush but was unable to show it to the new Secretary of the Navy, Benjamin W. Crowninshield, who had not yet arrived. Seeing that a new appropriation might be hard to get, he suggested that one be built experimentally and paid for out of the original half million appropriation, 'the *Mute* to act as a launch or tender to the Steam Frigate and be as much a part of her armament as any of her boats.' He was successful in this, apparently, for he wrote Crowninshield from Trenton on 17 January that he had word from New York that funds had been received for that purpose.[45]

Work on *Mute* was hardly more than begun when, on 24 February, Fulton died. He had caught a severe cold crossing the Hudson upon his return from attending a hearing regarding the Hudson River monopoly at Trenton. The ferryboat had been stopped by ice, short of the New York shore, and he and his lawyer, a Mr. Emmet, had to walk the rest of the way over watery ice. Emmet fell through and Fulton got wet and exhausted helping him out. After two or three days in bed he had gone to his Paulus Hook works to have a look at the steam frigate. This was just enough to give him renewed inflammation of the lungs which caused his death.

Fulton's workmen were unable to continue work on *Mute* without his assistance. But an equally impelling reason for stopping was the fact that Fulton's death occurred just as the war ended. The news of the signing of the Peace at Ghent was brought to New York by the British sloop-of-war *Favorite*, which arrived on 11 February. The official messenger reached Washington on the 13th.

The Government decided to suspend work on the Baltimore battery, on which $61,500 had been spent, but to complete *Fulton* so as to establish 'the utility and efficacy of the plan.' The final payment of $50,000 was not sent until over four months after Rutgers had requested it.[46]

On her first trial trip on 1 June *Fulton* took a turn around the harbor. The Committee, Mr. Brown, the builder, Mr. Stoudinger, the engineer successor to Fulton, and Captain Smith, the inspector, were all aboard. According to a newspaper account, she proceeded 'majestically' though opposed by a stiff breeze and a strong ebb tide. Her speed 'was equal to the

[45] Fulton to Homans, 9 January 1815, N.R.C., *Miscellaneous Letters*, 1815, I (33); Fulton to Crowninshield, 16 and 17 January 1815, Ibid. (61) and (66).

[46] Rutgers to Crowninshield, 1 March and 7 April 1815, N.R.C., *Miscellaneous Letters*, 1815, III (1) and (146½); Crowninshield to the President, 18 April 1815, N.R.C., *Letters from the Secretary to the President*, 1798-1820, pp. 303-304.

most sanguine expectations.' This being a trial of her 'enginery,' sails were not used. Salutes were exchanged with the forts and she received a visit from the officers of a French ship of war. Rutgers, writing to Crowninshield for urgently needed funds, stated that certain remediable defects had been discovered.[47]

Her next and more spectacular trial was on the fourth of July when her salutes became a part of the celebration of the national holiday. This time she proceeded far enough to bring Sandy Hook lighthouse to bear to the west. Leaving Corlears Hook at 9 A.M., she returned at 5:20 P.M., having covered a distance of about 53 miles. Although she was able to stem a 4 or 5 knot ebb tide 'and even make headway against it,' the voyage must have been a tedious one. Captain Bunker's *Fulton* came alongside 'on a jaunt of pleasure; but such was her superior swiftness, that she soon passed the frigate; although, the latter went with sufficient velocity, always to be able to effect the purposes for which she was constructed.' The inspector, Captain Obed Smith, declared 'she performs all we want of her' and a newspaper reporter stated that 'in addition to the unexpected velocity of this vessel, she steers like a pilot boat, and in one minute, may be laid in any position.' [48]

Samuel Mitchill reported at length to Crowninshield. After stating that she had demonstrated the practicality of moving a battery of heavy cannon by steam, he went on to say:[49]

> The greatest difficulty that we have had to encounter is the want of a sufficient supply of air to keep up the inflammation of the wood under the boilers. These capacious reservoirs, you know, are in the hold, on one side of the vessel. It was hoped that a sufficient quantity of oxygenous air would have been furnished through extensive gratings and open hatches in the main deck, by tubes through which outside current may pass directly to the fire-place; and by the adaptation of a large windsail. Yet, after all, it was found impossible to raise more heat of steam than to elevate four inches of quicksilver; whereas the mercury ought to have been supported by it eight inches at least, to make her move with a becoming speed.
>
> By other openings and conductors it is conceived that as much air can be introduced as will raise steam enough to the requisite elasticity.
>
> The water-wheel which, on the engineers original projection, was found to wallow, has since been raised eighteen inches. Its performance on the late occasion was handsome. It revolved easy and cleared itself neatly.

In Mitchill's opinion the grand problem was solved: 'Steam can propel a Vessel of War. The establishment of this fact is a compensation for all

[47] *The National Advocate* (New York), 2 June 1815; Rutgers to Crowninshield, 3 June 1815, N.R.C., *Miscellaneous Letters*, 1815, V (77½).

[48] *New-York Gazette & General Advertiser*, 6 July 1815; *National Advocate*, 5 July 1815.

[49] Mitchill to Crowninshield, 14 July 1815, N.R.C., *Miscellaneous Letters*, 1815, VI (39).

the trouble and expense she has cost.' Further experiments should be conducted to determine the effect of the entire weight of cannons and stores upon her draft, to find out the quantity and quality of fuel she consumes, and the size of crew she requires 'and what practice and discipline they may require different from other vessels of war.'

In their final report, made the following December, the Commissioners mentioned a third trial on 11 September, which is further described in a letter of 13 September 1815 from Samuel Mitchill to David Porter, Navy Board, Washington.[50] Departing from Corlears Hook at 8:38 A.M., *Fulton The First* went through the Narrows and performed 'beautiful manoeuvres' around the frigate *Java*, which was anchored about two leagues within Sandy Hook. She returned to Rutgers Slip at 7:00 P.M. 'without having met with a single disastrous occurrence. For although in manoeuvring around the *Java*, she was carried so near as to rub our ports against her cannon, there was nothing serious in the collision.'[51] During this trial *Fulton The First* had aboard 26 guns, ammunition, and stores, which brought her to a draft of ten feet, four inches. 'But she was nevertheless so buoyant, that there was a space of more than two feet between the surface of the water and the platform connecting her two parts.' Her average velocity without the use of sails was 5½ knots per hour, since she made two against the East River ebb tide, which was running 3½ knots. About 150 passengers were invited aboard for the trip and Mitchill comments that the difficulty officials and visiting citizens experienced in boarding the vessel at Corlears Hook 'proved abundantly the insuperable difficulty there would have been for enemies to approach and ascend her sides.' The heat experienced by the firemen was mentioned by the Commissioners as one of *Fulton's* inconveniences. Mitchill stripped and went below for some time. Descending between the two boilers, he found the heat registered 116 degrees Fahrenheit but, 'though exposed thus to its intensity, he experienced no indisposition afterwards. The analogy of potteries, forges, glass-houses, kitchens and other places, where laborers are habitually exposed to high heats, is familiar to persons of business and of reflection. In all such occupations, the men, by proper relays, perform their services perfectly well.'[52]

[50] New York Historical Society, 'Miscellaneous Manuscripts.'

[51] In Mitchill's opinion, 'had the *Java* been an enemy's ship she must have yielded or have been destroyed.' There was very little wind, so *Java* could not have manoeuvred had she needed to.

[52] Charles B. Stuart, *The Naval and Mail Steamers of the United States*, 158; Colden told the members of the Literary and Philosophical Society of New York in 1817 that the temperature between the boilers was 130° F and added that 'the truth is, there are yet the most obvious and important defects in the machinery of this vessel; and if these were corrected, it is highly probable, that her speed would be but little inferior to that of any steam vessel which has been built,' *The Life of*

In June 1816 *Fulton the First* was handed over to Captain Samuel Evans, Commandant of the Brooklyn Navy Yard, and, shortly after, placed under the command of Captain Joseph Bainbridge. In his final settlement of accounts Rutgers reported receipt of a total of $286,162.12 of which the Committee paid out all but $872.70. In addition, A. & N. Brown had an unsettled claim for $3,364.00. Thus it appears that the cost was close to $300,000 instead of the estimated $200,000.[53]

She was laid up in ordinary but had her roof taken off in order to take President Monroe for a ride, 18 June 1817. This was part of the new President's 'good will tour.' He boarded *Fulton* from a barge, as she lay off the Battery, and was taken, with his party, to view the forts at the Narrows and then to the home of Vice President Tompkins on Staten Island. The vessel returned to the Navy Yard about 7 P.M., having departed shortly before noon.

In 1821 it was decided to take out her guns and convert her into a receiving ship. When William Purcell, the Engineer, reported that, since she had no scuppers, dirt would get washed into the holds of the two boats and collect under the machinery where it could not be got out and would become a menace to health, as well as injure the machinery, and that, if the guns were taken out, she would lighten so much that the water wheel would not take hold as it should, it was decided to take out her engine as well. She was moored about 200 yards off shore on the flats of the Brooklyn Navy Yard.[54]

On 6 June 1829, at 2:20 P.M., the receiving ship *Fulton the First* blew up. Twenty-nine persons were killed instantly or died of wounds and twenty-three were injured. The explosion occurred shortly after Chauncey, Commandant of the Yard, and John Newton, her commander, had gone ashore following an inspection in which they had found everything in order. It was thought at first that the explosion was not an accident, but a Court of Inquiry decided that it was caused by the carelessness of a newly appointed sixty-year-old gunner who had gone below with a candle to get powder for the evening gun. She had in the larboard boat about 300 pounds of powder in flannel cylinders and casks. She was in a decaying condition. Although Chauncey thought the explosion sounded no louder than the firing of a 32 pounder, its force was sufficient to send masts and spars into the air in a great black cloud of smoke and debris. The hulk

Robert Fulton, 228. According to Mitchill, measures had been adopted 'by means of windsails, flues, gratings and flyers, to furnish a proper supply of air to feed the fires, and for refreshing the men who attended them below.'

[53] H.S.P., Fulton Papers, 224.

[54] Purcell to Bainbridge, 12 June 1821, N.R.C., *Letters, Commandant New York*, 1821-1822.

sank immediately. A diagram of the larboard boat was made by Sailing Master Clough for the Court of Inquiry.[55]

Within a few years after the War of 1812 most of the facts regarding this remarkable vessel became generally known. She was visited by naval officers from most of the maritime nations of Europe. The French naval officers Montgéry and Marestier, who visited this country in 1818 and 1819, made full reports to their government. Marestier's report on steamboats was printed and is today one of our best sources of information on early American steamboats,[56] but his and Montgéry's reports on *Fulton the First* and other American naval vessels were not printed and their comments are available only in articles which they wrote for scientific periodicals. They considered the steam frigate much overrated, due to exaggerated reports brought by travellers. Their comments are enlightening and they supply us with many descriptive details.

Marestier suggested that it would have been better to have had two small engines, one in each boat, so as to reduce the concentrated heat and to prevent the steam from cooling as it passed from the boiler in one boat to the engine in the other. He stated that the vessel consumed 3⅝ cords of pine wood per hour; that, ordinarily, the steam sustained a column of mercury 25 to 35 centimeters above atmospheric pressure and that the safety valve opened at 50 centimeters but that it could safely rise to 76 centimeters; and that the wheel made 16 to 18 turns a minute.[57]

From Montgéry we get the following array of details: the two hulls were 15½′ apart and joined together by the gun deck just above the waterline and by 12 oaken beams, each 1 foot square, at the keel; above the waterline she formed a single boat 152′ long, 57′ beam, and 20′ depth; sides 4′ 10″ thick; the lower sill of the gun ports about 5½′ above the water but no openings midships where engine and boilers were located; draft 10′ 4″ but would be 11′ if fully armored; ends rounded and exactly alike with two rudders at each end being placed at each side of the interior canal; wheel in the middle, 16′ diameter with eight paddles, each 14½′ wide and 3′ high; two lateen sails and two jibs, so that she could sail in either direction without coming about.

The 120 h.p. engine with inclined single cylinder and 5 ft. stroke was connected directly with the paddle-wheel; boilers consisted of a single

[55] N.R.C., *Court Martial Records*, Vol. 21, No. 502.

[56] See, Marestier's *Mémoire sur Les Bateaux à Vapeur des États-Unis d'Amérique*, THE AMERICAN NEPTUNE, I (1941), 412-416. Stratford Canning, during his service as minister to the United States (1820-1823), also visited *Fulton the First*. His account of her was first published in THE AMERICAN NEPTUNE, IV (1944), 327-328.

[57] *Procès-Verbaux des séances de l'Académie des Sciences*, VII (1820-1823), p. 437.

cylindrical shell 8′ in diameter and 22′ long with an inner tube about 5′ in diameter forming the furnace and extending about halfway through the boiler, the heat returning in two 3′ tubes and the furnaces completely surrounded by the boiler water; pressure was normally about 6 pounds per sq. in., the height of the column of mercury varying several inches with each stroke of the engine piston; water level indicated by dry cocks; salt water used, the deposits being relied upon to fill up cracks; a jet of water sprayed into the exhaust trunk induced the condensation necessary for a vacuum; the air pump transferred sea water and condensate to a 'cistern' from which about 9/10 of it was forced or drained overboard at the uneconomical temperature of about 200 degrees F, the remaining tenth being fed to the boiler.

When fully armed she carried 30 long 32 pounders, twelve on each side and three at each end. There were no openings above the engine or boilers except air hatches which were insufficient for the stifling space between the two boilers. The water-wheel was covered by wooden sheathing in the form of steps and this afforded the only opening on the upper deck. The part of the gun deck over the canal was fitted with staterooms for officers and high ratings, the balance of her complement of 500 men apparently slinging hammocks alongside the guns. There were to have been four 100 pound Columbiad submarine guns, one at each end of each boat, but they were never put in place. She did have a forcing pump, 33″ in diameter, which, when not used to turn the wheel could throw 60 to 80 gallons of cold water per minute a distance of several hundred feet.

Montgéry states that her displacement, laden, was 1,450 tons, and that he got that figure from a copy of the original plan which 'I have from M. Noah Brown.' Colden's figure of 2,475 tons, which has been generally accepted, must be measurement tonnage. Montgéry also said she could carry four days supply of wood fuel or twelve days supply of coal. He gives her speed as less than 6 m.p.h. without sails and when there was no wind or contrary sea. In conclusion he said: [58]

> In general there exists too formidable a conception of this battery. The sides are supposed to be impenetrable; this may be true for ordinary bullets, but the bombs, shells, and other projectiles of which the large ships are able to make use would penetrate and easily burn the great masses of timber work. The gun ports of the

[58] This quotation and the preceding descriptive details are taken from Lieutenant (now Captain) Ralph R. Gurley, USN, 'The U.S.S. *Fulton the First*,' *U. S. Naval Institute Proceedings*, LXI, 322-328 and are the basis of his drawings. They are based, in part, on Montgéry's *Notice sur la vie et les travaux de Robert Fulton* in *Annales de l'industrie nationale et étrangère, ou Mercure Technologique*, 1822, pp. 260-262. Montgéry says he got his information 'à bord même du bâtiment, ayant les plans sous les yeux, et étant dans la compagnie de personnes qui pouvaient me fournir les renseignements les plus authentiques,' Ibid., 262.

Fulton the First **form wide mouths which present a passage to all species of projectiles right where the gunners are arrayed. Finally, one must note among the defects of this ship that the upper deck, which is only slightly higher than the water level, could be easily boarded.**

The Navy built another *Fulton* in 1838 but along quite different lines. The double-boat experiment was not repeated, nor were the 4′ 10″ sides. Although *Fulton the First* was not copied in any important respect, she remains the *first* steam war vessel. Moreover, she awakened naval architects, especially foreign naval architects, to the possibilities of steam power. She demonstrated that engines could be protected by being kept below waterline and by means of protective armor. Civil War monitors were built on these principles and they, in turn, showed the way to modern seagoing heavily armed and armored war vessels. Fulton may have aspired to be some things that he was not but in this, at least, he was the first.

'Twas the Night Before Christmas

(An Old Tar's Dream)

BY F. P. HARLOW

'Twas the night before Christmas; 'Three sheets in the wind,'
He should have been praying; he knew he had sinned.
For big socks were hung by the chimney with care;
He was due at his home, but he couldn't get there.
The snow had been falling a foot or more deep;
He staggered to fall and was soon fast asleep.
His sou-wester pulled down on top of his head,
He dreamed of St. Nick and the reindeer he fed;
How one was quite fractious, a really bad boy,
He rolled in his sleep shouting, 'Here! Ship ahoy!
You'll wake up the neighbors! So, call it a day.
Pipe down with that clatter! Haul taut and belay.'
The moon came out shining a bright silvery glow,
To shine on the shellback that lay in the snow.
Then, in his dreams and what more should appear
But a medium sled and eight bottles of beer.
The sled started running a very fast pace
That shook up the bottles clear out of their place;
Then hitting a head sea that shook up the beer,
When off came the tops, and it changed to reindeer.
Then, St. Nick appeared and all stood very tame;
He hitched them well up and he called them by name;
'Now Whiskey! now, Ranzo; Dreadnaught! and Hilo!
On Stormey! on, Rio! and Haul away Joe!
Now, Blow the man down! and Yeo-hip! with the toys,
We'll skin up aloft for the good girls and boys.'
Then, up to the main-top the fast coursers flew,
With eyes on the foc'o'sle in which lived the crew.
St. Nicholas, said, while he held his big sack,

'I never can slide down that galley smokestack!'
And then in his wisdom, said, 'Oh! what a crew!
There's no children here, so we better skiddoo.'
His 'gaff-topsail eye' took a squint up the town
And spied a big chimney that he could slide down.
Then, down the big chimney, he came with a bound
And filled all the socks without making a sound.
He scattered the toys around; smiled with a grin,
While glistening icicles hung from his chin.
In oilskins he dressed and he really looked tough;
His great big round belly looked full of plum duff.
And lobscouse of cracker hash, — beans and salt horse, —
With lime juice and dandyfunk, — thrown in of course.
His dimples were deep like a hole in his face;
You knew at a glance he was not of this race.
The squint in his eye threw his head in a twist;
His left leg was short and he had a port list.
He spoke not a word while he filled all the socks,
Then, looked up the chimney of bricks and old rocks;
But spitting tobacco juice out of his mouth,
He said in a twinkle, 'I'm now going south.'
He shinned up the chimney and jumped in his sled
And off with his team from the house top he fled.
He spoke through his trumpet, while still very near,
'Merry Christmas to all and a Happy New Year.'
So vivid the dream and his head very thick,
He felt all around to shake hands with St. Nick.
Then, whispering softly from old barley corn,
'Sho-long to you Nic'las! — (hic) — Come back in the morn.'

The Hudson River Steamboat Thomas Cornell, *1863-1882*

BY DONALD C. RINGWALD

THE steamboat *Thomas Cornell* (official number 24756) is probably the most neglected vessel of her class and era that ever plied the Hudson river. After noting that she ran between Rondout and New York and was wrecked on Danskammer Point, most historians pass on without further observation. At first this is surprising, when one considers that her length of 310 feet made her the largest vessel ever constructed for the Rondout – New York run; that she was the largest vessel ever to run regularly as a local night boat on the lower and middle river; that she was amongst the last of the great beam engine, boilers-on-the-guard night boats constructed for the river.

Acting as a counter-balance, however, are the facts that her appearance was overshadowed by the coming advent of the mammoth *St. John*, which the People's Line was preparing for the Albany trade; that her running mate on the Rondout night line was *James W. Baldwin*, which remained on the river as *Central-Hudson* until 1911 and is still remembered vividly by most boatmen; and that the Rondout day boat of her period was the famous *Mary Powell*, a craft that rose in the fancy of valley residents until she was dubbed 'Queen of the Hudson' and dimmed the glory of most of her contemporaries. In addition to all this, *Thomas Cornell* was a steady, unspectacular boat that had the good fortune to become incapacitated only twice until her final grand spree, and simply did a good job capably and without bluster for a period of almost two decades. Perhaps this last, more than anything else, accounts for even few pictures of her being presently in existence.

Before proceeding further, it might be well to explain the location of 'Rondout,' as mentioned in this article. Originally, Rondout was a separate village, located along the north bank of the creek of the same name, a tributary of the Hudson, and 91 statute miles from the Battery in New York City. Being near the eastern end of the Delaware & Hudson Canal,

Rondout grew to be the busiest port between Albany and New York. Adjoining it on the southwest, and also along the creek, was the village of Wilbur, and on the northwest, the village of Kingston. In March of 1872, these three villages were incorporated in the city of Kingston. The port of Kingston continued to be, and still is referred to as Rondout, but the term now designates only that portion of Kingston which borders on the lower creek.

It was for the freight and passenger business between this village and New York City, that *Thomas Cornell* was built. At the time, two steamboat companies were maintaining daily service with way landings. The firm of Romer & Tremper provided one steamboat out of Rondout on Tuesdays, Thursdays and Saturdays, and out of New York on Mondays, Wednesdays and Fridays; Major Thomas Cornell, founder of the Cornell Steamboat Company, ran another on the alternate days, except Sundays. The Major had operated *Manhattan*, built in 1847, to handle his share of the trade, but when Romer & Tremper brought out their *James W. Baldwin* in the spring of 1861, the newer boat proceeded to gain the favor and fares of the traveling public. Accordingly, the next year Cornell made plans to replace *Manhattan*, which made her last trips on his line that fall, with a new boat bearing his own name. As built, *Thomas Cornell* measured 310 feet in length by 34 feet beam, with a depth of hold of 10 feet, and was launched on 20 January 1863[1] at the yard of Elisha S. Whitlock, at Greenpoint, Long Island. Meanwhile, to fill in on the Rondout line, Major Cornell chartered the 1843-built *Knickerbocker*.[2]

Thomas Cornell's completion was much delayed and, although it was expected that she would be ready for service about the middle of May, it was not until 15 September 1863 that her trials were held in New York Harbor, where she 'performed admirably, meeting the expectations of her builders, and all others in any way interested.'[3] She had cost $150,000. Her wooden hull, drawing 6 feet of water and strengthened by a hog frame and four spars, was propelled by a vertical beam engine[4] with a cylinder 6 feet in diameter by 12 feet in stroke, rating at 600 nominal horsepower.

[1] Notes of Elwin M. Eldredge.

[2] *Knickerbocker* arrived in Rondout creek on Sunday, 29 March 1863, and left on her first trip in the service at the scheduled hour of 5 P.M. on 30 March. Captain David Abbey, Jr.; Clerk William H. Cornell; Pilots Henry Marsh and L. Shultis, all from *Manhattan*, took over *Knickerbocker*. *James W. Baldwin* commenced her season out of Rondout on the following night.

[3] Rondout *Courier*, 18 September 1863.

[4] Constructed by Morgan Iron Works, New York, for steamer *Southern Michigan*, built in Buffalo, N. Y., 1852, to operate on Lake Erie in railroad connection. With increase in railroad trackage, she was laid aside in a few years and her engine purchased and removed for installation in *Thomas Cornell*. John H. Morrison, *History of American Steam Navigation* (New York, 1903), pp. 373-376. Erected in *Thomas Cornell* by Caldwell & Birkbeck, Jersey City. — Notes of E. M. Eldredge.

Steam was supplied by two boilers on the guards, designed by O. G. Fowler, her engineer, and constructed by John Dillon at the Rondout Works. Paddle wheels were 36 feet in diameter, with 36 buckets of 11 feet face and 2½ feet dip on each wheel.

Three decks — main, saloon and hurricane — were carried. The main deck aft, the saloon deck and a lower cabin and dining room located in the hold, were devoted to the accommodation of passengers. The remainder of the main deck, to a point well ahead of the fan-decorated wheel boxes, was utilized for freight. All joiner work was constructed under the superintendance of Captain David Abbey, Jr., who had been selected to command *Thomas Cornell*.[5]

On her first scheduled run, she left New York for Rondout from the foot of Jay street on Tuesday afternoon, 22 September, at 5 o'clock, returning from Rondout at 6 o'clock the following evening. The enthusiastic editor of the Rondout *Courier* went to New York to make the trip and, in his issue of 25 September 1863, became her strong partisan:

> On Tuesday night last [22 September] the new craft came to the owner's dock at Rondout for the first time. As we had the pleasure of making this initial trip, our timing of the run read thus:
>
> | | |
> |---|---|
> | From Jay street, New York, to Newburgh | 3:14 |
> | From Newburgh to Poughkeepsie | :59 |
> | From Poughkeepsie to Rondout Light | :55 |
>
> Making landings at Newburgh, Milton, Poughkeepsie and Pell's. The running time from New York to Rondout, was a fraction over five hours. The boat was not put to her speed and came up against a strong North-wester with slack water from Yonkers. . . .
>
> Competent judges pronounce the *Cornell* the best built, and probably one of the swiftest that ever floated on the Hudson. No pains or cost have been spared to make her so, and a visit to or trip in the *Cornell*, which will be made as pleasant as visit or trip can be by the courtesy of her officers, will give a living idea up to date of the utmost that mechanical skill, lavish outlay, and good taste can do to make a peerless steamer for the peerless Hudson. . . .
>
> The model is a marvel of symmetry, and the veriest landsman will read speed and lightness in the curved line ending in the clipper bow [*sic*]. The timbers are massive and of the best material, and all the work has been done with the greatest care. . . .
>
> We could not but be struck with the ease of the motion of this new steamer, driving at such speed through quite a swell in the teeth of a nor'wester which hardly allowed one to take the deck. It was as steady as a rock, and the powerful machinery worked without jar or din — the very perfection of an illustration of vast strength, directed by a mighty will with consummate skill.
>
> This addition to our steam fleet gives the palm of all the Hudson River craft to

[5] Rondout *Courier*, 25 September 1863.

Rondout, and if some of the old magnates up and down stream don't turn out something better than their two or three last adventures at building, the Rondout men will hoist 'the broom' like old Van Tromp and sweep the river.

The new steamer takes the place of the *Knickerbocker* and will leave Rondout on Monday, Wednesday and Friday, during the season, at 6 P.M., *without tows*.[6]

Thomas Cornell's entry into the middle Hudson traffic arena was well timed. That fall she and her running mate were hauling larger cargoes than had been carried on the line at any time previously. On 11 December 1863, when the weather stopped boats from going north of the town of Hudson, the Rondout lines stated that they would continue to operate as long as possible. Navigation was becoming rough, however, and the Rondout *Courier* was soon to report that

At this writing, Thursday afternoon (17 December), a hail storm is raging and two inches of hail on the ground. The steamer *Baldwin* left her dock at 4 o'clock, and it is not expected she will return again this season. The steamer *Thomas Cornell* left here on Wednesday night at about 9 o'clock, and will probably not make her appearance here again this season.[7]

Because of the increase in trade, Romer & Tremper announced plans to lengthen *James W. Baldwin* during the winter to bring her more in line with *Thomas Cornell*. The public was cautioned to 'Look out for the *Baldwin* next spring when her bell rings.'[8]

On Saturday, 12 March 1864, *Thomas Cornell* opened her first full season on the river when she cast off at 4:30 P.M. from Jay street, New York, and arrived in Rondout at midnight, commanded by her former clerk, William H. Cornell.[9] She was late, due to a light supply of coal being aboard; a strong ebb tide all the way; and fields of floating ice making cautious navigation prudent.

Her running mate, *James W. Baldwin*, ringing her bell and lengthened as promised from 242 feet to 273 feet 5 inches, appeared in the creek the following night and the season was well underway. The leaving time from Jay street had been advanced to 4:30 P.M., while the Rondout hour remained 6 P.M.

[6] This reference to tows was italicized, because *James W. Baldwin* had not been averse to turning an extra penny by hauling a freight barge when given the opportunity.

[7] Rondout *Courier*, 18 December 1863.

[8] Ibid., 8 January 1864.

[9] Captain David Abbey, Jr., her first commander, had shortly before purchased a steamer to engage in the towing of coal barges between Rondout and Poughkeepsie, and the command in 1864 passed to William H. Cornell, her clerk. On the Hudson at this time, the captain was actually a deck captain, concerned principally with the handling of the boat's business, while the navigation was left in the hands of the pilots. The title 'purser' had not come into use, and that worthy was designated by the down-to-earth appellation of 'clerk.' O. G. Fowler, the chief who had supervised the installation of the machinery, remained with her as first engineer, with C. Wells as second.

Both boats will run WITHOUT TOWS. And we trust this experiment of giving a daily line of the most complete and fastest freight and passage boats on the river, will be as marked a success to the enterprising owners, as it will be an accommodation to the public.[10]

Thomas Cornell made her last trip of the 1864 season to New York on 21 December and was laid up there for the winter. Her 1865[11] season ran from 25 March to 28 December, with one day of grace being afforded because she was held in the creek on 26 December as the result of a dense fog. At the end of that year, *Thomas Cornell* commenced what was to become her standard practice of wintering in Rondout, except during major overhauls.

March of '66 rolled 'round; David Abbey, Jr., apparently not having prospered with his towing venture, was back in *Thomas Cornell* as captain; and the new schedule called for another change in time to 4 P.M. from Jay street.

The removal of the winter piled obstructions on the Hudson and tributaries was quiet and without startling flood or catastrophe. By the calendar spring was with us. A stray steamer or a chance sail now and then varied the scene on the river, and a vagrant keel or two disturbed the Rondout, but it was not until the *Cornell* made her first trip down on Wednesday, coincident with the spring Equinox, that we felt fully awake again. . . . We can challenge a comparison of the record of Rondout steam-navigation with that of any place in the United States, or any point worth speaking of. It is a regular success and we have a right to be proud of the rank taken by our steamers. . . . We will stake the status of Rondout and no small share of its prosperity on the superiority of its steamers during the season opened this week by the *Cornell* and the *Baldwin*.[12]

Thomas Cornell laid up in Rondout on 21 December 1866, and resumed operation on 20 March 1867, running to a new terminus at the foot of Harrison street, New York. A sudden drop in temperature closed the 1867 season. The river filled with ice and *James W. Baldwin* found herself unable to clear away from Rondout for New York on 13 December. No word was heard from *Thomas Cornell* until 10:30 on the night of the 16th, when all Rondout was aroused by the lusty blowing of steamboats off the lighthouse. Crowds gathering along the docks saw the veteran side-wheel towboat *Norwich*, all her life the winner of innumerable battles with river ice, banging her way in the creek with *Thomas Cornell* and a propeller tug, *Sammy Cornell*, in her wake. *Thomas Cornell* had shattered the tops of both of her wheel houses by throwing up ice from

[10] Rondout *Courier*, 18 March 1864.

[11] *Thomas Cornell's* tonnage, under New Custom House Measurement, effective 1865, was 1160.85.

[12] Rondout *Courier*, 23 March 1866.

her paddles. The heaviest ice encountered was at Esopus Meadows, where it had piled up to between four and five feet in thickness. The following day *Norwich* broke out *James W. Baldwin* and got her started back to New York.

In 1869, William H. Cornell returned to *Thomas Cornell* as clerk, and Thomas Purdy succeeded O. G. Fowler as 1st engineer. Mr. Purdy was not a man to spare his coal, and *Thomas Cornell* was not a boat to refuse it. During his regime, the three furnaces in each of her two boilers ate up a total of 60 tons of coal per round trip, or 15 tons per boiler one way.[13]

In 1870, she made the best time of her career when, on an afternoon in the summer, she left Harrison street at 4 P.M. and arrived in Rondout at 8:50 P.M. The running time without landings was 4 hours 8 minutes.[14] She was hauled off the route in mid-December that year and replaced by *Rip Van Winkle*, carrying freight only. This steamer also opened the run in 1871, until *Thomas Cornell* came out early in April. During the winter lay-up, a new set of boilers had been built by Murphy, McCurdy and Worden[15]; her engine had been overhauled by Cobanks and Theall; a deckhouse had been added to her hurricane deck from the quarters aft of her pilot house, back past the wheels; and a total of thirty new staterooms had been put in. (Plate 33) The amount expended on this work was $75,000 — half the original cost.[16]

Only a few days later, on Saturday, 15 April 1871, when almost abreast of Pell's Dock, Esopus, on her up trip, she burst a steam chest. No one was injured and little damage done to the boat. Her old friend *Norwich* came down and took her in tow to Rondout, where repairs were made. A second mishap of the season occurred on Saturday, 22 July, when she broke almost all of the buckets in one of her wheels while coming up off Yonkers. *Sunnyside* filled in for two round trips until she was repaired and able to resume operations.

In May, an alert reporter had noted that 'The pilot of the steamer *Cornell* seems to have lately introduced a new style of making landings; that of "rounding to" in boating parlance, at several stopping places. The grand curve through the limpid element is quite exquisite if not so expeditious in the end.' [17]

Thomas Cornell and *James W. Baldwin* closed the season of 1871 on 7 December. The *Baldwin* went over to Hoboken for general overhauling

[13] Notes of George W. Murdock, who once fired *Thomas Cornell*.

[14] Notes of E. M. Eldredge.

[15] Ibid.

[16] Kingston *Journal*, 12 April 1871.

[17] Kingston *Press*, 18 May 1871.

and, in order to keep up with the demands of the line, the construction of an additional tier of staterooms on her hurricane deck.

On the 1st of April in 1872, quite unintentionally, the now nine year old *Thomas Cornell* played the lead in a long forgotten bit of history as the first passenger steamer ever to sail from the city of Kingston. As explained previously, in March of that year the villages of Rondout, Kingston and Wilbur were incorporated into the city of Kingston and new Kingston, through its absorption of Rondout, gained an important border on tidewater. When *Thomas Cornell* sailed for New York to open her season, with

> an immense freight and a large number of passengers. . . . , her departure was witnessed by a crowd of people who cheered loudly as she swung into the stream, and as she glided down the creek she was greeted by the ringing of bells and shrieks of steam whistles from other boats and the foundry, all of which salutations were answered by waving handkerchiefs, fluttering flags and the deep tones of the *Cornell's* bell and the resonant roar of her steam whistle.[18]

The spring of 1873 came late. *Thomas Cornell* had to be taken to New York for the installation of a new shaft before she could enter service, but on the last of March the river was still closed. On 3 April, the towboat *Norwich* broke ice down through Crum Elbow in an attempt to start it moving, and on the following day at 12:30 P.M. steamed out the creek with *Thomas Cornell* in tow. Aided by a strong current, the two boats raced down the creek, but upon reaching the ice fields settled down to a more dignified pace. By 2:10 P.M. they were only off Port Ewen, a short distance below the mouth of the creek, and were moving very slowly. *Thomas Cornell* was not a light boat to have on the end of a hawser under the best of circumstances, and *Norwich* found it far from an easy task not only to break ice, but to pull her charge through it as well. By 6 P.M. the pair had reached Poughkeepsie where the channel was almost clear. With comparatively easy running ahead, they were expected in New York on the following morning.

Repaired, *Thomas Cornell* returned to the creek again at 5:30 P.M. Sunday, 13 April, with her crank fastened to a new shaft 'as tight as the money market.'[19] A gale had held her in New York over Saturday night. When she arrived, she was down to her guards with the largest load of freight ever brought into Rondout creek on a single vessel up to that time.

1874 was Captain Abbey's last season on the boat which he had brought out, and when *Thomas Cornell* left her dock at 6 P.M. on 14 April 1875, she was under the command of Captain Charles Ru Ton. William H. Cor-

[18] Kingston *Daily Freeman*, 2 April 1872.
[19] Ibid., 17 April 1873.

nell, usually referred to as 'Captain Billy' because of his previous tour of duty as commander, was still clerk, but for some time had been using the title of 'First Officer.' The new season began auspiciously. The boat had been repainted by a Mr. Tubby and was 'as clean as a Dutch tile and as neat as a pin. A large crowd gathered to see her off, and followed her with many a hearty wish as she rounded into the river and her colors, all spread to the breeze, vanished behind the Esopus headland.' [20]

Before she came out on 29 March 1876 a number of her staterooms were enlarged and modernized and during the winter of 1876-1877 the furniture in her main saloon was reupholstered in crimson and that in her forward saloon in blue.

She made her last trip down from Rondout for the season of 1878 on 6 December and then returned to Rondout, where her saloons and staterooms were carefully stripped of furnishings prior to a major overhaul. *William Cook* was placed on her run with freight only and no way landings on 9 December, and shortly thereafter *Thomas Cornell* went down to the yard of Devine Burtis, Jr., at South Brooklyn, for rebuilding of the hull. *Thomas Powell*, Captain William H. Cornell, filled in on her run in the spring of 1879 until 12 April, when, repairs having been effected, Captain Cornell started *Thomas Cornell* out of Harrison street at 4 P.M. on her first trip of the year. Oily matter left in her two new return tubular flue boilers [21] caused foaming so that she ran slow and did not arrive at Poughkeepsie, where a delegation from Kingston had gone to meet her, until 2:30 A.M., and was not tied up in Rondout creek until 4 A.M. Sunday. She was visited that day by hundreds of people, but apparently not all of the Rondout steamboat fraternity were satisfied with what they saw and many freely expressed the opinion that the artisans of Devine Burtis, Jr., had just enough skill as carpenters to be able to go out into the hills and cut firewood! [22] At this time *Thomas Cornell* carried 75 staterooms, with berths for 200.[23] The entire overhaul had cost $85,000.

In 1880, the time of departure from Pier 34, foot of Harrison street, was advanced to 2 P.M. on Saturdays. Time on Tuesdays and Thursdays remained at 4 P.M. The next year the Saturday sailing was advanced another hour, to 1 P.M., which enabled her to make much of the trip by daylight.

In 1881 *Thomas Cornell* was again hauled off early and her place taken by *City of Catskill*, built in 1880 for the night line between New York and

[20] Ibid., 15 April 1875.
During 1875, on her Saturday up trips, she was advertised as having capacity for 2500.

[21] 25 by 12 feet. — Notes of E. M. Eldredge.

[22] Kingston *Daily Freeman*, 15 April 1879.

[23] Notes of E. M. Eldredge.

Catskill and recently returned from services at the Yorktown Centennial. *Thomas Cornell* went down to Red Hook and there had her guards raised. New king posts were erected from the main deck to the hog frame at each fire room and turnbuckles were run from these and from the hog frame to help support the guards. Two of her spars were spliced and strengthened, and the stanchions in the dining room supporting the main deck were replaced with stouter timbers. She arrived back at Rondout on 18 December 1881 to lay up for the winter, during which she was to have engine repairs and receive new steam chests built by Delamater, of New York.[24]

Thomas Cornell opened the season of 1882 from Rondout on Monday, 20 March, on her previous schedule, running in line as usual with *James W. Baldwin*. Her principal officers now were William H. Cornell, captain; Henry W. Briggs, 1st pilot; Louis Shultis, 2d pilot; Andrew Barret, chief engineer; Samuel Coles, purser. Exactly one week later she ended her career on the Hudson. On the evening of 27 March 1882, *Thomas Cornell* slipped out of Rondout and started down the river in the rainy darkness. When she left Poughkeepsie at 7:40 P.M., a fog hung over the water and, when Marlborough was reached, Captain Cornell was of the opinion that it might be wiser to lie there until it lifted. Pilot Briggs, however, assured him that there was no danger and the steamer got underway again at 8:10 P.M. As she left the dock, the bowsprit of a schooner grazed her side and broke some slats in her gangway railing. Captain Cornell inspected the damage, stopped by his office, remarked that it was a mean night and ascended to the pilot house, where the two pilots were at the wheel. He stepped in, turned over a chair cushion that had been rained on, and commenced to say something about the collision with the schooner when suddenly Pilot Shultis shouted, 'Heave! Heave!,' and rang to stop. At the same instant, *Thomas Cornell* went high on Danskammer Point. (Plate 34)

This headland projects out from the west bank about 2½ miles below Marlborough, and on its northern side sweeps around in a curve which terminates in a narrow formation of rocks bearing north and rising about twelve feet above water. Right onto these went *Thomas Cornell*, ripping out the side of her bow for thirty feet aft and crushing it in obliquely to under the forward gangway. Her keelson raised without breaking and forced up the bulkhead aft of the forward gangway, allowing the water to run back into her hull and slowly sink her. The lifeboats were immedi-

[24] Her final tonnage, as listed by S. W. Stanton in *Master, Mate and Pilot*, October 1909, was 1256 gross.

ately lowered and the women and children ferried to the point, while a ladder was put over the bow onto the ground for the male passengers and the crew. In 20 minutes all of the hundred odd passengers and their baggage were ashore. A fireman, Frank Stenglein, who was off watch and asleep in the forecastle, was the only person injured. He awoke to find himself in a semi-vertical position and, not knowing that there was a hole beneath his bunk through which he could have crawled out on the point, worked his way through a broken partition to get onto deck and in the process cut his arms and knees on splinters.

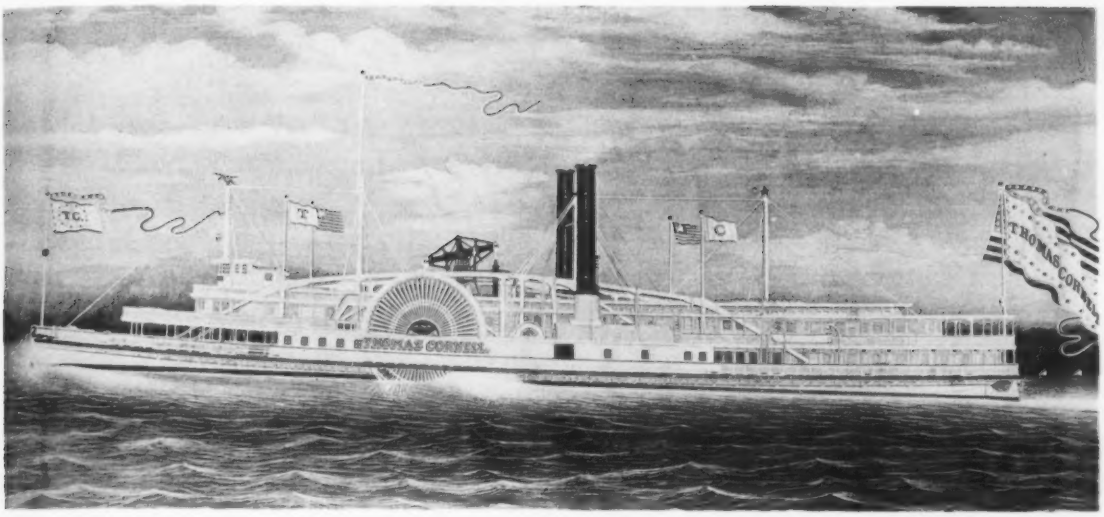
Captain Cornell and the officer remained aboard, tolling the bell, and about an hour after the accident *John L. Hasbrouck*, southbound from Poughkeepsie to New York, was attracted, stood in and embarked the *Cornell's* passengers and most of her crew. By this time she was sinking rapidly and the captain of *John L. Hasbrouck*, fearing disaster for his own vessel, was anxious to get back out in the river. As he backed away, the buoyant joiner work of *Thomas Cornell's* saloon was rising as the hull settled and the sound of breaking glass came sharply across the water. The *Cornell* completed settling in 40 feet of water about an hour and a half after striking, during which time the bow slipped back two feet. It was thought at first that she would slide entirely off into the river, but the stern settled 9 feet in the mud and prevented such an occurrence.

John L. Hasbrouck put ashore at Newburgh, where they spent the night, those members of the *Cornell's* crew whom she had embarked. Thirty passengers, having had enough steamboating for one day, also left, but the remainder continued to New York.[25]

The following morning the entire crew was assembled by the wreck, the towboat *Ceres* came down from Rondout and the work of salvaging the furnishings and freight was begun. This freight consisted principally of tubs of butter and was valued at between seven and eight thousand dollars.

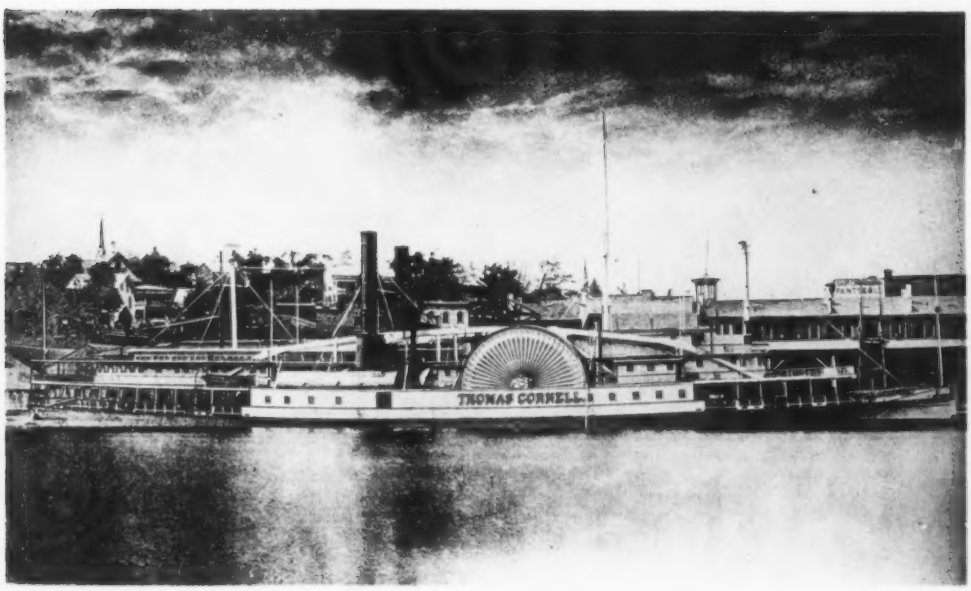
Chapman's steam wrecking derrick and divers came up from New York, commenced to assist in the removal of all of value that might float away or be damaged on board, and took down the smoke stacks. Preparations were made to float the boilers by forcing air into them, but when the Coast Wrecking Company bid $17,500 to raise the boat and put her in drydock with boilers intact, their offer was accepted. Canal boats were now alongside to receive *Thomas Cornell's* freight, furniture and bedding.

[25] The foregoing recital of the accident is from Kingston *Daily Freeman* for 28 and 29 March 1882, and from an account to the writer by the late Mr. Frank Stenglein, who was a member of the crew and was later engineer on *Norwich* for many years. The steamboat *Walter Brett*, of the New York and Catskill night line, filled in on *Thomas Cornell's* run commencing 29 March.



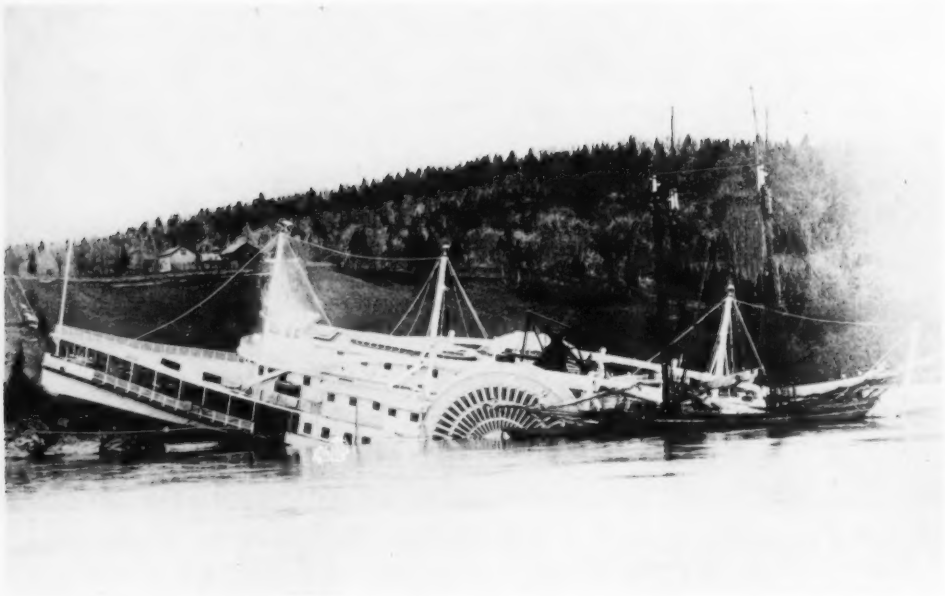
Steamboat *Thomas Cornell* as she appeared in her early days on the Hudson River

Painting by James Bard

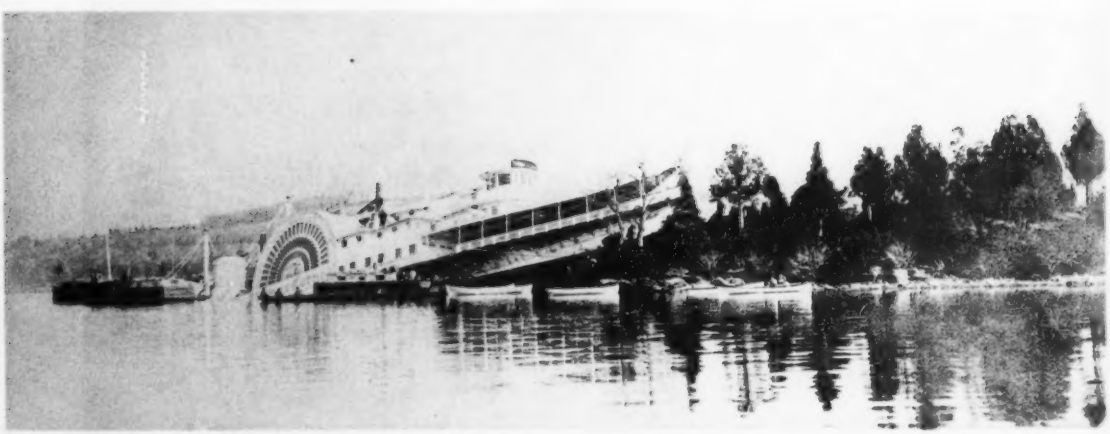


Steamboat *Thomas Cornell* after the addition of staterooms on the hurricane deck

Courtesy of Captain Roger W. Mabie



Steamboat *Thomas Cornell* on Danskammer Point, viewed from the river



Steamboat *Thomas Cornell* on Danskammer Point, viewed from the west shore

Note that in the final stage *Thomas Cornell* carried the saloon deck extended to the bow, a redesigned fan in the paddle boxes and other minor alterations

Courtesy of Captain William Odell Benson

These boats, with sheets, blankets and mattresses hung up all over them for drying, gave a strong domestic aspect to the scene.

The vessel presented an extraordinary sight and hundreds of ghoulish minded excursionists viewed the wreck from small steamers which expressly came from Poughkeepsie, Newburgh and other places. As a Negro crew member of *Ceres* aptly put it, 'The *Cornell* looks as if it was going up in the bush to hide!' [26]

Pilot Briggs was deeply affected by the accident and on the morning following stood pale and wretched on Danskammer Point, nervously inquiring of members of the crew as to whether they thought him at fault. He would not eat and refused to speak to any visitors except to say, 'I made a mistake.' [27]

Meanwhile, the twilight mariners both ashore and afloat were sharply divided in their views on the accident. One group maintained the pilots had been grossly negligent in operating in a fog and urged that they never be permitted to set foot on board a steamboat again. Mr. S. D. Coykendall, who was associated with his father-in-law, Major Thomas Cornell, in the operation of the Cornell boats, said to the press that the accident was due to 'Carelessness! Nothing but carelessness! Our orders against running in fog have always been preëmptory, but the pilots have disobeyed them, and you see the result.' [28]

A. B. Valentine, New York agent for the company, also stated that every employee of the line fully understood the unwritten rule against running in fog. On the other hand, many boatmen approved the action of Pilot Briggs in leaving Marlborough and pointed out that all of the night lines on the river were entirely desirous of having their boats arrive on time and were not charitably inclined towards employees who lost valuable freight and passengers by tying their boats up at docks along the river. This latter reasoning would seem to be borne out by the fact that on the night of the accident, all other boats were reported by Poughkeepsie on time.

Major Cornell, who received the extension of sympathy from most of the inhabitants of Rondout in the $200,000 uninsured loss of the boat, dispelled all doubt about his point of view when he said of the crew:

> They did all they could in saving life and property, and did it nobly. They have my thanks and need in their depressed state of mind the sympathy of all.[29]

[26] Kingston *Daily Freeman*, 28 March 1882.
[27] Ibid., 30 March 1882.
[28] Ibid., 28 March 1882.
[29] Ibid., 1 April 1882.

He lived by his words, too, because when *City of Catskill*, which had been chartered to replace *Thomas Cornell*, came up on 8 April, most of the old crew were in her, with the principal exceptions of Captain Cornell, 2d Pilot Shultis, Steward Abram Van Woert and Bartender William Deudney. The owners, under the operating agreement, had requested that Captain Ru Ton and one pilot be kept aboard, unless Major Cornell wished to assume complete responsibility, while the steward's department and the bar had been leased independently of the company or the boat. Captain Cornell remained in *Thomas Cornell*, assisting in the raising.[30]

Salvage operations continued under the direction of Wrecking Master Merritt, of the Coast Wrecking Company, and his crew of 25 men, and on 4 May preparations were made to get *Thomas Cornell* off at high water. Alongside her, on each side, were three pontoons and a schooner. Seven chains passed underneath and were attached to the pontoons, on which were steam pumps operated from boilers on the schooners. Thirty feet had been cut out of the bottom of the bow, so that the only portion still lying on the point was directly beneath the forward gangway. Ahead of the bulkhead, below the main deck, 200 empty kerosene barrels were piled to give the bow buoyancy when it came off.

During the morning, with a strong flood tide running and a southeast wind blowing, the wrecking company's tug *Relief* got out a hawser on *Thomas Cornell's* stern and, assisted by the Cornell tug *W. E. Street* and towboat *Sandy*, commenced to pull the stern of the wreck around to the south. At the same time, another Cornell tug, *Isaac M. North*, with a long line out on the bow of the wreck, pulled away to the north. When the stern of *Thomas Cornell* had swung off to the south, Mr. Merritt would signal all boats to stop engines and the tide would swing the stern north again. This process, known as 'yawing,' aided by the forward pontoons being sunk and pumped out, moved the creaking and groaning steamer off at the rate of about 6 inches an hour. Then, near noon, the stern swung 20 feet further south than at any previous time, and as it sagged back the bow moved 2 feet. On the next try, at 12:25 P.M., the bow slid gracefully off into deep water and the wreck was completely afloat, lying in chains at the same angle she had assumed after sinking. *Thomas Cornell* was immediately moved across the river and beached between New Hamburgh and Low Point, to be put on an even keel for towing. By evening she had been worked in to within 500 feet of the east shore. with most of her forward

[30] Ibid., 10 April 1882.

deck under water. Inshore of her lay a canal boat with the stacks aboard.[31]

On the morning of 13 May, the leak in her forward bulkhead had been stopped, she was fully afloat and tugs were preparing to tow her up to Port Ewen. It was discovered that aft of the paddle wheels, her guards were badly damaged.

Despite the fact that the salvage operations had been successfully carried out, the vessel had suffered severely from the effects of the accident, the semi-submersion and the raising, and a decision to abandon her and build a new boat[32] as a replacement was announced on 11 July 1882. At this time, she was tied up at the outer dock at Port Ewen, with a steam pump on board to keep her afloat. Her boilers were out and plans were being made to remove and store the engine ashore.[33] Near her, on the beach, were two other former favorites of the Hudson — *Alida* and *Thomas Powell*.[34] Unlike them, however, *Thomas Cornell* was not quite finished. After the hull had been stripped, it was towed around to Connecticut and at Mystic River in 1883 made into two barges, named *Donald* and *Robert*, for the Long Island Sound coal trade.[35] *Donald*, which lasted the longer[36], measured originally 312.63 tons, while *Robert* was 388.60 tons as built. And so, severed in twain, *Thomas Cornell* went on through more decades of unobtrusive toil, realizing not that her only monument would be the note that she once had the audacity to try her fortune at being a landlubber.

31 Poughkeepsie *Eagle*, 5 May 1882.

32 Iron hull propeller *City of Kingston*.

33 Engine was subsequently broken up for scrap.

34 Kingston *Daily Freeman*, 11 July 1882.

35 Notes of E. M. Eldredge.

36 Listed as abandoned, *Merchant Vessels of the United States — 1927* (Washington; U. S. Government Printing Office, 1927), p. 873.

The Insular Campaign of 1759: Martinique

BY MARSHALL SMELSER

BEFORE William Pitt assumed the direction of the British armed forces in the Seven Years' war, his country had done very badly. Only the highlight of Clive's brilliant leadership in India (for which the home government deserved no credit) relieved the tarnish on the British arms when the Duke of Newcastle lacked Pitt. After Pitt joined Newcastle the record reads like a conscientious catalog of battle honors: Fort Duquesne, Louisbourg, Goree, Guadeloupe, Quebec, Quiberon, Martinique (1762), Montreal, Havana, Manila.

Nevertheless, despite the impression given by this sparkling list, there were failures in the same period. One of those failures was at Martinique in 1759. The island-hopping campaign of 1759, of which the failure at Martinique was a part, has been obscured by the drama of Wolfe's Canadian fighting and by its own lack of climactic incident. Furthermore it was finally brought to a successful end by the conquest of Guadeloupe, which has distracted attention from the inglorious beginning of the campaign.

All of Pitt's motives in sending a force against the French West Indies are probably never to be made clear. The force was ordered to seize and hold certain specified territory, but it is to be doubted that the powerful sugar planters would want more competition *within* the empire. Probably Pitt hoped for the conquest of some territory which he could trade for lost Minorca at a peace table, without being required to spend newly-taken Louisbourg for the purpose.[1]

The decision to send a force against the French West Indies was made in September 1758. Pitt was full of ideas after he learned (17 August 1758) that Louisbourg had fallen. Newcastle wished to destroy Louisbourg and await a French peace-feeler, but he was not seriously consulted and the only person Pitt felt he had to convince was Lord Anson at the

[1] For conflicting discussions of Pitt's motives see the careful Walter L. Dorn, *Competition for empire* (New York, 1940), 362, and the equally careful Richard Pares, *War and trade in the West Indies* (Oxford, 1936), 185-186. The available evidence is thin and is scattered in Newcastle's papers and in West Indian estate correspondence.

Admiralty, who reluctantly agreed to the Martinique affair on condition that Pitt give up a number of other schemes (excepting two forays in Africa of which Anson had already approved).[2] The Boswell of West End waggletongues, Horace Walpole, may have reflected an existing cloud of scepticism when he wrote

> Martinico is the general notion; a place the strongest in the world with a garrison of ten thousand men. Others now talk of Guadeloupe, almost as strong and of much less consequence. Of both, everybody that knows, despairs.[3]

To head the land forces Pitt hoped to have Colonel John Barrington (of the new Sixty-fourth regiment) but when he carried his list of names to the king Major General Thomas Peregrine Hopson was selected — a man grown old in the service with little experience — and Barrington was made second-in-command with local rank as a Major General. Hopson accepted the appointment dutifully but reluctantly.[4] For commander of the naval forces Pitt secured the appointment of the senior officer on the Leeward islands station, Captain John Moore, whose chief impress on history before 1758 had been as a member of Byng's court martial. Moore was on his station at the time of this appointment. The convoy from England was to be commanded during passage by Captain Robert Hughes.

The land forces consisted of six infantry regiments in three brigades (the Third and Sixty-third, the Fourth and Sixty-fourth, the Sixty-first and Sixty-fifth) and two unbrigaded units (a part of the Thirty-eighth, and the second battalion of the Forty-second regiment, since known as the Black Watch). These troops were directed and supported by a small special staff and headquarters, and by engineers and artillery. The sea force was composed of eight ships (fifty to ninety guns), one frigate, and four bomb ketches. There was also a hospital ship and numerous unlisted transports. On the Leeward islands station when the combined force arrived were two ships, three frigates, and a sloop; others joined later, both fighting and supply ships. Regarding supplies, whether from Britain or locally purchased, there was never any shortage for this expedition. The land force counted, at peak strength, about 5700 men.[5]

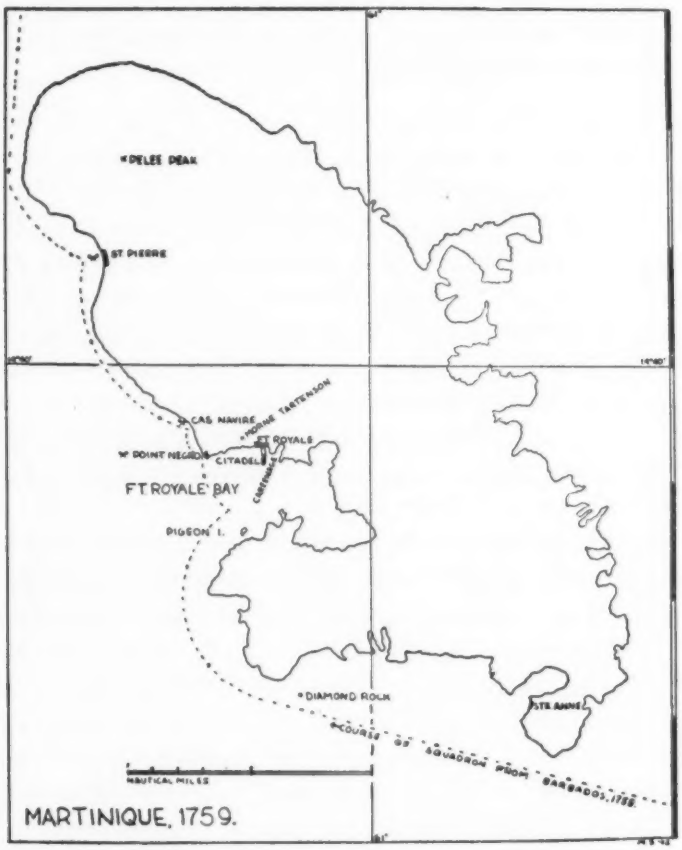
[2] Sir Julian Corbett, *England in the Seven Years' war* (London, 1907), I, 206-209. Hereafter cited as: Corbett.

[3] Horace Walpole, *Letters*, Cunningham ed., III, 182, quoted in William Pitt, *Correspondence of William Pitt*, Kimball ed. (New York, 1906), I, xlvi-xlvii. Hereafter cited as: Pitt, *Correspondence*.

[4] Corbett, I, 376-377; see also Horace Walpole, *Memoirs of the reign of King George the second*, Lord Holland ed. (London, 1846), III, 170, 170n., 171.

[5] Colonial office 5/215, 61-80, and 95-114 (transcriptions in the Library of Congress); Pitt, *Correspondence*, I, 366-370, 396-397; Richard Gardiner, *Account of the expedition to the West Indies, against Martinico* (Birmingham, 1762), 2 (hereafter cited as: Gardiner); Newcastle papers, Add.

Orders were written to Hopson, Hughes and Moore on 16 October 1758. Ships were to be assembled at Spithead, take on the troops at Portsmouth and Plymouth and then sail for Barbados to join Commodore Moore's squadron. Hopson and Hughes spent an unhappy month of pierhead turmoil. Foul weather interfered with supplying the ships, and the



transport commanders shut their eyes to signals thrown out by Hughes. Having put out to sea on 25 October, the Channel gave them a going over. They lost one transport on Pool bar, two more were surveyed and condemned as unseaworthy, another had to have a new main topmast, and still another had to be reloaded. After the convoy regained shelter

MSS. 32891, folio 63, British Museum: Viscount Barrington to Newcastle, 9 May 1759 (transcriptions in the Library of Congress).

H. C. Wylly, *History of the Manchester regiment* [Sixty-third] (London, 1933), I, 7-9; C. R. B. Knight, *Historical records of the Buffs* [Third regiment] (London, 1935), II, 194*ff*.; Archibald Forbes, *The 'Black Watch'* (New York, 1897), 59; John Entick, *General history of the late war* (London, 1763), IV, 144. The works noted in this paragraph are hereafter cited by authors' surnames only.

bad weather continued another week. The pressure of Pitt's impatience increased and he showed a grand disregard (or ignorance) of the influence of weather on wind-powered navies. There was great relief all around when the convoy of seventy-three sail passed out of the Channel and the Commodore 'tacked again and stood on his Way.' [6]

An uneventful passage of forty-five days brought the convoy to Barbados on 3 January 1759, where thousands of Barbadians had been called to the shore by the usual alarm sounded when visitors' topsails were made out. Commodore Moore assumed his co-command and hoisted his broad pennant in *Cambridge*. The Leeward islands squadron (eight ships and eight smaller vessels) was dispersed at the moment and only two ships, three frigates and a sloop were with Moore. Eleven of the seventy-three ships brought out by Hughes had straggled, including the hospital ship, the artillery transports, a ship carrying most of the engineer officers, and the physician and his surgeons. Since it was thought impossible to surprise the French (a correct assumption, the French were already warned) it was decided to await the late-comers and to drill the combined force in the use of a new type of landing craft which had been brought along (twelve-oared, flat-bottomed, draft two feet, capacity sixty-three soldiers).[7]

In cooperation with the civil authorities the co-commanders attempted to raise locally-acclimated troops but were only offered an untrained volunteer regiment under a 'political colonel,' the services of which were not accepted. The British West Indies were but rarely, if ever, agreeable to sending their organized militia to fight away from home, on the ground that the island from which the militia were taken would be defenseless in their absence. Three hundred Negro slaves (not a defensive asset in Barbadian eyes) were provided, probably at a rental, and served later as draft animals for the artillery. By 12 January another ship had come in with three transports containing the Black Watch companies, and the artillery had also arrived. By free spending, carpenters, Negroes, and local surgeons had been hired, and an improvised hospital ship had been fitted and manned. About 1500 men had reported sick already. The health of the force would probably worsen rather than improve. So orders were issued to sail for Martinique on the morning of 13 January.[8]

[6] Colonial office 5/215, Pitt to Hopson, 22 Oct. 1758; Pitt, *Correspondence*, I, 369-370, 386-387, 386n., 395-396; fourteen pieces of Pitt-Hughes-Hopson correspondence (impatient or apologetic according to authorship) in Colonial office 110/1, 18 October to 12 November 1758; Gardiner, 2. (Transcriptions of Colonial office 5/215 and 110/1 are in the Library of Congress.)

[7] Gardiner, 2-4; Knight, II, 193-195; Pares, 268; Pitt, *Correspondence*, II, 20-22, and I, 396-397; *The gentleman's magazine*, XXVIII (1758), 242, 449.

[8] Pitt, *Correspondence*, II, 20-22; Pares, 221-222; Wylly, I, 9-10; Hopson to Martin, 30 January 1759, Treasury 1, bundle 390, folios 96-97 (transcription in the Library of Congress); Gardiner, 4, 4n.; abstract of Hopson to Pitt, 11 January 1759, in Pitt, *Correspondence*, II, 3.

They made the highest peak of Martinique at dawn on 14 January and a light ship was sent ahead to sound the well-fortified anchorage at Fort Royale, chief town of Martinique. A small merchant sloop was sighted in the early light, near Diamond rock, and raced home to give the first alarm. Several hours later Moore signalled his van to clear for action. The sounding boats, with pilots on board, were already brazenly working in the bay where a French seventy-four and two frigates lay uneasily. At noon the south point of Fort Royale bay bore NW three miles and the Commodore consulted his pilots. His question was whether to attempt Fort Royale, the civil and military capital, or St. Pierre, the commercial and privateering center. It was agreed, recorded, and signed that Fort Royale offered the better opportunity because it afforded a better landing point and because St. Pierre would probably surrender without defense if Fort Royale fell.[9]

The rest of the afternoon was spent in turning into Fort Royale bay, a nerve tiring job with square rigged ships against the trade wind in narrow waters. Occasionally they were under ineffective long range fire from the shore batteries. During this period, tactical plans were drawn, and six ships were given specific tasks to be accomplished in the next morning. Two were to knock out Fort Negro on the north point of the bay, and four were to silence a battery at Cas Navires (north of Fort Negro) which had been selected after small boat reconnaissance by the chief engineer officer as the best place at which to try a landing. Many of the ships stood on and off all night, and there was an occasional gun flash and report through the night. The French ship and one frigate had gone to cover in the careenage behind the citadel; the other frigate had made a successful run for the open sea and presumed safety.[10]

Fort Negro, on the point of the same name, mounted six or seven guns on stone walls and was barely within the range of the French gunners in the citadel. Fire was opened by the assigned force at about eight o'clock in the morning of 16 January, and the garrison fled after an hour of pounding. The Marines of the attacking ships clambered into the fort unop-

[9] Gardiner, 4-6; 'An account of the expedition against the islands of Martinico and Guadeloupe,' anon., in Pringle to Loudoun, 2 February 1759, Loudoun papers, Huntington library (hereafter cited as: 'The expedition,' Loudoun papers); Moore to Pitt, 30 January 1759, Colonial office 110/1.

[10] 'The expedition,' Loudoun papers; *The gentleman's magazine*, XXIX (1759), 143; Gardiner, 6-7; 'Journal of an officer,' anon., in Pitt, *Correspondence*, II, 27-29; Haldane's 'proceedings,' Newcastle papers, Add. MSS. 32887 (transcription in the Library of Congress)—Haldane was one of the three brigadier generals at the outset of the operations.

Regarding the escaped frigate, her master could presume the open sea to be safer because any frigate sent after her would probably have been gone for a week or ten days, beating back to Moore painfully; thus no chase was given, but she was taken in the Atlantic in February after a four hour action with an Englishman.

posed, spiked the guns, broke up their carriages, and threw the fort's supply of powder into the bay. They were back on board shortly after noon and their ships dropped to leeward to escape a shower of bombs from the citadel. At Cas Navires, the battery had been silenced shortly after nine o'clock. French troops who were at Cas Navires to oppose any landing saw the flash of red coats worn by the Marines at Fort Negro. Mistaking the relatively small Marine group for a landing wave of infantrymen in force they withdrew from their positions behind the beach to avoid encirclement and — unknown to the British — left Cas Navires undefended.[11] This was the last bit of good luck the British had at Martinique.

In ignorance of the fact that the French had pulled back from Cas Navires, General Hopson decided to land the brigades on the uninviting but secured ledges below Fort Negro rather than to risk an assault under musket fire on the beach at Cas Navires. While the landing craft were loading (a three-hour operation) the citadel began to drop bombs among the ships and the fleet dropped to leeward towing the boats perforce. Now faced with a choice between rowing two miles to Fort Negro within maximum bomb range, and perhaps landing in the dark, or testing Cas Navires, Hopson's choice was the latter. The troops were successfully put on shore between five and half past six in the evening, where they were formed and marched to Point Negro, while the fleet made sail and spent the night turning up into the bay.[12]

The troops had a hot march through heavy brush in broken country. Arriving at the only clearing they ever saw on the island they formed the conventional 'square' with the Highlanders on the angles and a screen of grenadiers across the front. 'Very much heated,'[13] they slept on their arms; during the night it rained. Thus far the operation appears to have been well-directed, and no casualties are recorded.[14]

The seventeenth of January was a grim and decisive day for the invaders. At dawn French irregulars in the brush opened fire to cover the entrenching of a post at a house in front. It took the grenadiers, supported by a regular battalion and two guns, to take the house and temporarily clear out the woods beyond it. Detachments hunted snipers all morning in the rough country around the square. When the grenadiers had blood-

11 Gardiner, 6-10; 'The expedition,' Loudoun papers; U. S. Hydrographic office, No. 1022, *Fort de France bay*; Edward Cust, *Annals of the wars of the eighteenth century* (London, 1862-1869), II, 284.

12 'The expedition,' Loudoun papers; Haldane's 'proceedings,' Newcastle papers; Gardiner, 8-10; Pitt, *Correspondence*, II, 27.

13 Haldane's 'proceedings,' Newcastle papers.

14 'Journal of an officer,' Pitt, *Correspondence*, II, 27; Haldane's 'proceedings,' Newcastle papers; Corbett, I, 377-379.

ily taken a commanding hill near the square and mounted a light battery on it only to suffer continued casualties from snipers on still another hill Hopson abandoned conventional tactics and sent his hardy young Scots into the thickets with claymores flashing, to deal with these 'French Forces of the Interior' in their own way. This counter-infiltration tactic brought relative peace until a body of French was discovered trying to establish itself across the line from the beach to the square. Then the engagement became general and confused. The Scots were beating the *maquis*, the Sixty-third regiment was engaged with the French in the rear,[15] the hill-top battery was barking regularly, sweating soldiers were bending to spades and muskets on the perimeter as they dug-in under sniping fire, and in the bay two bomb ketches were throwing shells at the citadel. The troops, a mile from their water, began to suffer from the sun. British troops (probably the Highlanders) were seen from the ships, ascending Morne Tartenson about a mile from the town. We know now that the hill was lightly defended by a pick-up force of stragglers from Cas Navires and Fort Negro, with no artillery, but the British were soon lost to sight and did not take the hill. Probably they were recalled. Meanwhile several line officers reported they could find no approach to Fort Royale which was passable for wagons and guns. With the number of casualties steadily increasing, and the objective as far away as ever, Hopson called his brigadiers into council.[16]

Hopson thought the fort might hold out for ten days after he reached it, and estimated that his forces could maintain themselves in their square for not more than two days. Hence he must either advance or retreat. In this situation his problem was fundamentally an engineering problem and the Chief Engineer's testimony was discouraging. He said that an advance would require the guns, mortars, stores, and baggage to be carried five roundabout miles by the three hundred Barbadian slaves and four hundred sailors of the fleet, while a thousand men worked ten days to make a road and another thousand carried water – all in dangerous guerilla country. After digesting this, Hopson sent to ask Commodore Moore whether the guns could be landed nearer to the citadel than at Cas Navires. Moore sent back three of his captains to say that Fort Negro was

[15] Since the sources appear to say that all of the grenadiers were engaged in front, and since light infantry seem not to have been introduced into the British army until after this time, it is difficult to imagine exactly what tactics were being used by the Sixty-third. In the 1750's extended order combat was usually the work of the grenadiers (a company of each regiment composed of the tallest men of the regiment) or of locally recruited partisans.

[16] 'Journal of an officer,' Pitt, *Correspondence*, II, 27-28; Gardiner, 10-11; 'The expedition,' Loudoun papers; Haldane's 'proceedings,' Newcastle papers.

the only other place where the guns could be landed (the best tactical advice was dead against sending guns ashore on their flimsy catamarans within artillery range of the enemy). Since Negro Point was no closer to the citadel than Hopson was this offer solved none of the artillery's problems. General Barrington was now sent to ask whether a joint assault could be made on the citadel by ships and shore force and, if so, whether the Commodore could also supply enough Marines and seamen to secure Hopson's communication zone from beach to front. Moore called all his captains on board to consider this and sent out boats to look over the shore line. (These councils, patrols, and the sending back and forth of distinguished messengers and counsellors took about four hours.) The pilots said it was hopeless to sail directly against the citadel: the fleet would take two days to beat five miles, and when the ships got there, one by one, they would be outgunned from above. When these pessimistic views were brought back to Hopson he ordered an evacuation — the enterprise was at an end so far as Fort Royale was concerned. The withdrawal was carried out intelligently and took six hours and a half, beginning at four o'clock in the afternoon. By shrewd disposition of covering posts and the ostentatious construction of new redoubts the French were kept in ignorance of the movement, and every man alive, whether able-bodied, sunstricken, or wounded, was brought off safely.[17]

Without any knock-down fight the force had secured a landing, had sent patrols to within a mile of its objective, and had then been evacuated. A grenadier captain and twenty-one enlisted men had been killed, and two officers and forty-seven enlisted men had been wounded. This was a relatively low casualty rate — to speak statistically of such things — but these lives had been spent for nothing, as we now know. It was hard luck that no native offered himself for sale because Hopson and Moore would have learned from any well-informed resident that they exaggerated the strength of the defense. From the first news of the coming of the British the richer inhabitants were sending out portable personality by the shipload.[18] On the day when Hopson ordered the withdrawal, the Commandant at Fort Royale was preparing to demolish his citadel,[19] and

[17] 'Journal of an officer,' Pitt, *Correspondence*, II, 20-22, 27-28; Haldane's 'proceedings,' Newcastle papers; Hopson *et al.* to Moore, 17 January 1759, enclosed in Moore to Pitt, 30 January 1759, Colonial office 110/1; Gardiner, 11-12; Robert Beatson, *Naval and military memoirs, 1727-1783* (London, 1804), II, 232, hereafter cited as: Beatson; Hopson to Pitt, 30 January 1759, Colonial office 110/1; Entick, IV, 145.

[18] *The gentleman's magazine*, XXIX (1759), 145. Perhaps only a rumor; nevertheless the West Indian nabobs generally had and passed on accurate information from their estate agents. This report was from St. Eustatius.

[19] Pares, 247, 248, citing Rochemore to Berryer, 13 March 1761, Archives Nat., Colonies, C^{8} A 63.

later inspection showed that its lines were too extended to be properly defended by the garrison usually established there.[20] During the hours when the British were putting off to the ships on 17 January, according to Lieutenant General Cust (who does not give his source but whose short narrative is otherwise the most accurate one consulted in print) the people of Fort Royale were assembled to send deputies to the British, with suggested terms for capitulation.[21]

On 18 January there was no time for 'morning-after' rest. The joint staff met with the pilots who were asked about the feasibility of attempting to take Fort Royale from the east, but they again advised against beating up to the citadel under fire. Next the generals conferred separately and agreed to recommend that St. Pierre be reconnoitered in force. Moore had earlier decided that the taking of St. Pierre would have no effect on the outcome of the campaign but he accepted or appeared to accept the suggestion. In the afternoon the ships were assembled and that night they made an easy run to St. Pierre.[22]

As previously observed, St. Pierre was the commercial center of the island and her merchants usually resisted the orders of the governors to keep their shipping safe under the guns of Fort Royale. They argued, correctly, that they could not be blockaded in the crescent-shaped roads off St. Pierre and that, although an occasional ship might be cut out by an enemy, no enemy could keep the trim privateers from slipping in and out, almost at will. Consequently there were forty sail of rich sugar ships at anchor when the British arrived (and the fact that Moore took not a single prize cost the invaders much prize money). St. Pierre roads were steep-to, with plenty of water for any ship then afloat. On first making the town the Commodore sent in a ship to sound the anchorage, covered by two bomb ketches which did their noisy best to distract the crews of the big guns in the town citadel. The trade wind was dying slowly at the time.[23]

At noon Moore sent his flag-captain with orders to *Rippon*, Captain Edward Jekyll, a new sixty launched in 1758, to silence a battery north of the town. The wind, very unusual, was light and from the west. At the

[20] Ibid.

[21] Cust, II, 285. For a summary of a rejected contemporary account of the reasons for the evacuation see Marshall Smelser, 'A note on *DNB* and the evacuation of Martinique, 1759,' THE AMERICAN NEPTUNE, III (1943), 168-169.

[22] Gardiner, 14; Pitt, *Correspondence*, II, 22-23, 29-31; Haldane's 'proceedings,' Newcastle papers.

[23] Pares, 247, 295, citing (at 247) Bompar to Machault, 20 October 1755, Givry to Machault, 28 October 1755, Archives Nat., Colonies C8 A 61, letter from St. Pierre, 12 May 1756, Archives de la Gironde, C 4318, No. 58; Gardiner, 14-16; Beatson, II, 233-236; Pitt, *Correspondence*, II, 28-29; Corbett, I, 377-379; 'The expedition,' Loudoun papers.

French Battery
French Battery
Carriage
TOWN of PORT ROYAL and CITADEL
English Battery
Pidgeon Island and Battery
GREAT BAY or PORT ROYAL
Fort Negro
Commodore and Squadron
VIEW of the TOWN and BAY of PORT ROYAL the Metropolis of the ISLAND of MARTINIQUE.

View of the Town and Bay of Port Royal

From Richard Gardiner, Account of the expedition to the West Indies, against Martinico *(Birmingham, 1762)*

BAY OF ST PIERRE
Citadel
Tower of St Pierre
Redoubt Road crossing the Ridge of the Heights
Commodore Moore with the Squadron and Transports

Island of Martinico, Bay of St. Pierre

From Richard Gardiner, Account of the expedition to the West Indies, against Martinico *(Birmingham, 1762)*

same time the transports were clustered like ducklings astern of the flagship and General Hopson went on board the flagship to confer with his naval colleague.[24]

Rippon let go her anchor about a hundred yards off shore and fired her broadside into the battery she had been sent against. The gunners on shore were almost immediately silent. Unnoticed by Jekyll the bomb ketches to the south were now beating seaward. Four other batteries next opened on *Rippon* at long range, hulling her in several places, carrying away part of her rigging, and wounding some of her people. With the wind from the west and a lee shore so close, the anchored vessel was a perfect target and she lay there and fought back for three hours before Jekyll concluded that he was not to be supported by the rest of the fleet and that the king was likely to lose his *Rippon* unless Moore recalled her or her master broke off fighting on his own responsibility. He consulted his lieutenants and his Marine captain. The decision was to put an axe to her cable and bend fifty backs in the boats to tow her off shore. After a tense thirty-minute struggle between leeway and the oarsmen (during which the silenced battery reopened and raked her freely) she was safe, following a profitless engagement of four hours and a half in which she fired seven hundred round shot (no casualty list is available). Moore seems to have ignored the entire episode.[25]

The Commodore and the Commanding General had been talking privately in the Commodore's cabin for several hours and without taking the advice of anyone they had agreed to abandon the attempt against Martinique. Their orders gave them the privilege of trying their strength elsewhere if the conquest of Martinique proved to be too tough an assignment. Hopson had no hope of Fort Royale and if St. Pierre were taken he did not see how he could maintain a garrison there since a force could only be supplied from ships in an insecure and uneasy roadstead. The town itself was commanded by innumerable hills which marched up to the central ridge of the island. Moore, for his part, saw no strategic advantage in taking St. Pierre and said that its fall would not affect the other defenses of Martinique in any way.[26] Accordingly he generously put in writing (thus risking later censure as a reckless innovator if the project failed) a proposal that they steer for Guadeloupe to see what might be ac-

[24] Beatson, II, 233-236; Gardiner, 15-17.

[25] Gardiner, 15-20.

[26] In reading the cautious correspondence of these gentlemen one must remind oneself that Martinique was *not* 'a place the strongest in the world' and that it was conquered by a British amphibious force three years later. Of noteworthy attacks on the island, Martinique has repulsed four British and one Dutch, has been taken three times by the British.

against Martinico (Birmingham, 1762)

complished there.[27] Hopson agreed. That night they sailed for Basse Terre roads, off Guadeloupe.[28]

Attention at home was distracted from this failure by the fact that the first news of it reached London in the same dispatch which told of taking Basse Terre, the principal town of Guadeloupe, before the month was out. Nevertheless there were some grumblers. Since French West Indian sugars all cleared for Europe by way of Martinique, few Englishmen knew that most of them were produced by Guadeloupe and that Guadeloupe was the richer island. Walpole said that Moore had been so subservient to the ministry in the affair of Admiral Byng's court martial that all the blame was publicly piled on Hopson.[29] Since no public blame was put on Hopson or anyone else, Walpole's testimony can safely be expunged. Gardiner, the Marine captain, published his opinion that the attack on Fort Royale had not been pushed vigorously. This was a serious charge and Byng had been shot for being found guilty of much the same thing. There is no supporting evidence beyond what all the sources prove freely — that Hopson had more prudence than he had dash or originality. Moore and Hopson may have been deficient in judgment but nowhere do they seem to have been obviously slack. Gardiner also alleged that *Rippon* had been placed in unnecessary jeopardy. Since neither we nor Gardiner know at what hour the decision was made not to attempt a landing at St. Pierre, this charge is nonsense. Sir Julian Corbett believed that certain gentlemen were soured because no sweet-laden prizes were taken at St. Pierre. If Corbett was correct (and it seems reasonable to believe so) he explained much of the anti-Moore criticism. Moore's orders were not to destroy commerce but to conquer territory.[30]

The failure at Martinique teaches no novel lesson but merely accents a commonplace. Ignorance can lose a campaign as surely as inferior tactics, logistics, health, or firepower. It was a misfortune of war for the British that they received no French deserters and, in their absence, could neither spy out the Commandant's strength nor read his mind. Furthermore it would be ungenerous to forget that here, as many times before and after, partisans equipped only with small arms but fighting in defense of their homes repelled regular troops — more by psychological effect than by firepower.

[27] The writer hopes soon to present a narrative of the naval and military events of the next few months at Guadeloupe, where a decisive victory was won by the British.

[28] Haldane's 'proceedings,' Newcastle papers; Moore to Pitt, Hopson to Pitt, 30 January 1759; Pitt, *Correspondence*, II, 22-23, and 29-31, respectively.

[29] Walpole, *Memoirs of the reign of King George the second*, III, 170.

[30] Gardiner, 14-16, 18-20; Corbett, I, 379.

Documents

Inventory of Sloop Tender *Edward*

The 'armed Vessel Sloop or Tender called the *Edward* commanded by Richard Boger Esquire Burthen about fifty Tons mounting six carriage guns' was the first British war vessel brought into the port of Philadelphia during the American Revolution. She was taken off the Virginia Capes, on 7 April 1776, by Captain John Barry in the Continental brig *Lexington*, sent into the Delaware, and condemned in the Pennsylvania Admiralty Court on 30 April. The inventory of the prize was made by the marshal of the Admiralty and was passed down through various hands to repose finally in the Historical Society of Pennsylvania. *Edward* was fitted out by His Majesty's frigate *Liverpool* at Norfolk, Virginia. After condemnation at Philadelphia, she was purchased by the Marine Committee and took the sea in the following July as the Continental sloop *Sachem*.

Inventory of the Sloop *Edward* with her Guns Tackle furniture and apparel And the Cargoe of the Sd Sloop

Anno 1776

The Sloop *Edward* with standing and runing Riging
One Bower Anchor about 700lb Wt
1 Kadge Do 120lb Wt
3 Bower Cables and part of another
1 Main Sail
2 Fore Sails
2 jibbs — 1 flying jibb
2 Square Sails
2 Top Sails
1 old Square Sail
1 old Top gallant Sail
1 Top Galt Sail half wore
a Remnant of old Canvass
6 Carriage Guns, three Pounders
2 Swivells
1 Boat with four Oars
1 Broken Musket
69 three Pound Shot
8 Double Headed Do
1 Box with Patrige Shot[1]
a fiew Swivells and Grape Shot
1 fire Grapling
about 3 Barrlls of Powder
twelve Catridge Boxes with Musket Catriges
10 Powder Horns
2 Wood Catridge Boxes
2 Gunners Hand-Spikes
6 Ship Do
2 Iron Crows
24 Water Casks
15 Hammocks
10 Empty Hammocks
2 Water Funnels
2 Water Pumps
2 Pump Boxes
2 Pump Bolts
2 Iron Rings
3 Ensines. 2 Jacks and two Pennants
2 Wooden and 1 brass Compass
1 Speaking Trumpet
1 Hour two half Hour & 1 quarter & minit Glass
3 Horn Lanthorns

Turn over

One large Scrubbing Brush
6 Scrapers
1 Straw of Gimbletts
3 Corking Irons
1 Corking Mallett
1 Grindstone
6 Hammers
1 Iron Do
1 Larthing Do[2]
I Iron Mall
1 Carpenters and one Cooper Adze
6 Axes and 1 Hatchett
1 Large Auger and 1 Tap Borer
2 Handsaws & 1 Chizell

[1] Partridge shot.
[2] Lathing hammer.

2 Hand Leads & 4 Lines
2 Pr Cann Hooks
3 Sarven Malletts & 2 Marling Spikes
2 Harpoons and 2 Pr of Granes[3]
1 Pr of Bellows & 1 Sentar Bitt
a parcle of Spare Blocks
Spare Hooks and Thimbles
9 Iron Potts
4 Frying Panns
4 Iron Tea Kettles
2 Copper Do
a Pese of Copper
2 Iron Skelletts
2 Dutch Ovens
1 Iron Spade
2 Iron Hose
1 Copper Stove
1 Pr Tongs
2 Fire Shovells
1 Pr of Cast fire Irons
1 Barrll of Tallow
2 BBs of Flower
5 half Barrs of Do
part of a Barrell of Do
3 Barrs of Salt
2 Casks of brown Sugar
1 Cask of Reasons
3 Casks of Rum
2 Empty Casks
2 Boxes of Candles) not full
1 Do Soap)
Part of
Part of a Box of Candles
1 Cask of Sheathing nails & half a Tub with small Nails
one Cask of Oat meal
1 Do of Pease
1 Olige Cask of Pork
1 Do of Beef
1 Harness Tubb with Beef & Pork
4 Baggs of Bread
1 Do Pease
1 Cask of Fish
a fiew Cod Fish
1 Table
6 Rush Bottom Chairs
8 Doz & 2 Quart flask Bottles
14 half Gall Do
1 Empty Arm Chest
1 Arm Chest with Books & other Things therein
6 Sorted Pewter Dishes) with assorted
13 Pewter Plates) Cyphers
21 White Delf Plates
11 Supe Do
10 Picters[4]
1 Canviss Bagg with Womans & Children's Cloths &c
12 Reams of Papers
2 New & 2 old Saddles
1 Baskett with Sunds
1 Bundle old Canvess
1 Iron Cumbuse with two Potts[5]
2 Saine Lines
2 Draw Bucketts
about 15lb of Match
1 Pocket Pistoll

[On verso]
Inventory of the Stores &c
of the Sloop *Edward* —

[3] Grain, an iron pronged instrument for spearing fish.

Contributed by William Bell Clark.

A Contract for Building A Schooner at Annapolis, Maryland, 1733

The contract printed here is in the Carroll-Maccubbin Papers at The Maryland Historical Society, Baltimore. It is one among several thousand items dealing with the affairs of the Baltimore Company, an organization founded in 1731 for the manufacture of iron on lands to the south and southwest of the new town of Baltimore at the head of the Patapsco River. Dr. Charles Carroll, who executed the contract, was the leading partner, others being Charles Carroll of Annapolis, Daniel Carroll, Daniel Dulaney, and Benjamin Tasker.

The document shows clearly the sort of craft planned by the Baltimore Company to transport supplies to their works and to carry away the products of the forges and furnaces. No details are omitted, except the rigging and the sails, which evidently were not within John

[4] Pitchers.
[5] Camboose.

Casdorp's sphere of activity. Particularly interesting is the use of the word 'scooner' to designate the vessel, for it was only twenty years since the building of the alleged first of that type in Gloucester, Massachusetts. This seems to indicate that shipwrights in Maryland were not slow to imitate the example of their New England colleagues. Worth comment, too, is the method of payment: half cash, half in goods from the company store.

Other papers in the collection include memoranda of articles furnished Casdorp under the agreement concerning payment, receipts for sums advanced (including one signed with a mark by Mrs. Deborah Casdorp), and orders for payment to various men who worked on the vessel. Charles Nickson was one of the laborers, and his receipt for wages shows 6/8 for five days' work at the rate of 40/ a month. A final item reveals the fact that William Metcalfe supplied 21½ lbs. of tallow for use at the launching and was paid 10/9 for this service. Of Casdorp himself, nothing is known.

ARTICLES OF AGREEMENT made agreed & concluded upon by & between John Casdrop [*sic*] of ye City of Annapolis Shipwright on ye one Part & Charles Carroll of ye City Chyrurgeon on the behalf of the Baltimore Company on the other Part WITNESSth that ye said John doth hereby oblige himself to build in the City aforesaid for the said Company a Scooner of the following Dimensions Vizt Thirty eight foot Keel Straight Rabit seventeen foot Beam eight foot or eight foot & half hold with Sufficient Rake fore & aft as shall be directed & waist of two foot & half Deep a flush Deck fore & aft with a Quarter Deck & Cabbin of Sufficient Bigness & fitted in workmanlike manner with hatches skuttles & all other Requisites the said Vessel to be square stern round tuck & of a sailing Body with all her Timbers of Sufficient Substance well hewed & freed from bad or faulty timber to be skinned with good sound plank full two Inches thick free from bad worm eaten heart or wind shaken fitted on with good sound Locust Trundles with the Wayles of a Sufficient thickness not under three & half Inches thick to be well fitted for Burthen & cieled or skinned on ye Inside with good Inch & half Oak plank the Deck to be of good two Inch pine Plank except where Oak Plank is proper to be put in The said Vessell to be completely fitted & finished to a cleat & delivered afloat to ye sd Charles on behalf of the said Company with good & Sufficient Masts Yards & Boomes Gaffs windlass caulking graving & all other the Carpenters Work as requisite & compleatly fitted & finished off also one good strong sufficient Boat fit for such a Vessel at or upon the first day of June next ensuing the date hereof IN CONSIDERATION whereof & the foregoing Promises the said Charles on behalf of the said Company doth Covenant to pay unto him the said John at the Rate of three Pounds p Ton Current Money the one half in Money & ye other half in Goods such as he the said John shall have Occasion for delivered at the said Companys Store at Patapsco & make Payments at the Times as hereafter Vizt at the Raising of the said Vessell twenty Pounds when the Wayles are about or when the Beams are put in the Sum of fifty Pounds & the Remainder when the said Vessell shall be delivered fitted & finished afloat & ye said Charles on behalf of the said Company doth covenant to find all the Ironwork fit & requisite in ye said Vessell IN WITNESS whereof & the foregoing Promises the said Parties have hereunto set their Hands & Seals interchangeably this tenth Day of September Anno Dni 1733 —

JOHN CASDORP

Sealed and delivered
In presence of
her
Elizabeth x Murphey
mark
Cha: Steward

[Endorsement in Charles Carroll's hand]
This vessell was Longer in the Keel

than the agreement & I believe may measure about Sixty one or Sixty Two Ton Carpenters way of measuring —

Contributed by William D. Hoyt, Jr.

Trinity House Yachts

The following articles of agreement and specifications of vessels built for the Trinity House Service were described in the preceding issue of The American Neptune, VI (1946), 228, where two similar documents of earlier date were published.

No. 3

Specification for a Contract to be entered into by Thomas White of Cowes with the Corporation of Trinity House, London, for building and erecting the Hull or body of a new Buoy Yacht, for the service and use of the said Corporation.

DIMENSIONS

	Ft.	*Ins.*
Length of the Keel for Tonnage	58	3
Breadth from Outside to Outside of a 3 In. Plank	19.	8
Depth in the Hold from Topside of Limberstrake to the upper side of the Beam at the Main Hatchway	10.	4

Keel ..... to be in three pieces, 10 In. sided by 11 In. deep to have a 3 In. Deadwood on the Keel, the Scarph to be 3 Ft. 6 In. Long and bolted with six Bolts of ⅞ In. diameter.

Keelson ..... to be 10 In. sided and 12 In. deep to be in two Pieces and to give proper Shifts to the Steel Scarphs.

Stem ..... to be in two Pieces sided 9½ Ins. and moulded 12 Ins. the Scarphs to be 2 Ft. 6 Ins. long bolted with six ⅞ In. bolts.

To have sufficient Hawse timbers and Apron.

Stern Post ..... to be 10 Ins. sided and square at the Head 9 Ins. to be 16 Ins fore and aft at the Heels of the lower Timbers together with proper Deadwood Knee, all of which to have sufficient number of ⅞ In. Bolts drove through the whole to be clenched under the Keel.

Floor Timbers ..... to be sided 9 Ins. and to have 10 Ins. whole wood at the cutting down to be moulded at the Head 7 Ins.

First Futtock ..... to be sided 7½ Ins. and moulded at the Head 6½ Ins.

Second Futtock ..... to be sided 7 Ins. moulded at the Head 6 Ins.

Top Timbers ..... to be sided 6½ Ins. moulded at the Head 4½ Ins. and every third Timber to be framed and bolted with ¾ In Bolts, two in each Scarph.

Room and Space ..... Twenty Two Inches.

Plank without side .....To have two Streaks of Wale 4 Ins. thick, to make 16 Ins. in breadth and one of 3 Ins. above, and one of 3 Ins. below the Wale, to have one Streak of 4 Ins. at the Floor Heads 10 Ins. broad the remainder of the Plank to be 2½ Ins. The Topsides to be 2 Ins. Paint Streak 2½ Ins with 3 In. Plank sheer.

Plank within Side ..... To have one Streak of Clamp 3 Ins. thick and one 3 Ins. Limber Streak, one Streak of 4 Ins. over the Floor Heads, all the rest of the Ceiling to be 2 Ins.

Breasthooks ..... to have three Breasthooks and one Crutch sided 8 Ins. to be 10 Feet long with seven ⅞ In. Bolts.

Beams ..... to be sided 10 Ins. and not more than 4 Feet 6 Ins. apart except the Main Hatchway Beams which are to be 4 Feet 4 Ins. in the Clear to have a good substantial half and Fork Beam to give sufficient security for such wide space, the Beams to be double knee'd except it be hereafter fixed for the Beams to be dovetailed and Bolted into a sufficient thick Clamp wrought for that purpose which will remain for determination of the Corporation at any time before the working of the Clamp.

The Deck to be framed with proper Partners and Carlings; the Main Hatchway coaming to be 6 Ins. thick and 10 Ins. deep.

Platform Beams ..... to be of Oak fore and aft 5½ Ins. by 5 Ins.

Roughtrees ..... to have a Roughtree Rail, fore and aft with sufficient Stantients, to have an Iron Roller fix'd in a solid chock forward.

Waterways ..... to be 4 Ins. Plank, the Flat of the Deck to be of 2½ Ins best Dantzick Deal, to have a 3 In. Oak Plank each side the Mast to run forward.

Hatchways ..... to have as many Hatchways and Scuttles as shall be required, with Hatches properly fitted.

Windlass ..... to have a good sufficient Windlass with Iron Necks, and properly secured with Wood and Iron Pawls, to have sufficient Bitts for receiving the Bowsprit, and for Pawling the Windlass together with proper Carvick Bitts, secured in the Upper Deck, by sufficient Carlings and Knees.

To fix a good substantial Winch to the Mast or Bitts.

To have a Stirrup at the fore, and after end of the Keel, to connect the Stem and Stern Post to the Keel.

Channels ..... to be of sufficient length, to be 9 Ins. broad and 8 Ins. thick, with as many Deadeyes as may hereafter be directed with Bindings of 1⅛ In. Diameter, with sufficient Chain Plates, properly bolted to the side to fix sufficient Runner and Tackle Plates with as many Eyebolts as may be required, to find all Iron that may be required by the said Corporation for making the said Vessel secure, and complete.

Bolts ..... The floors to be bolted with 4 In. Bolt drove alternately thro' the Keelson and Keel, the whole to be clenched at the Underside of the Keel.

Timber and Plank ..... All the Timber and Plank to be of English growth, properly seasoned, and free from Sap, Strake, or Defect, the whole of the frame to be well grown, and square, and if at any time there shall appear any unsound Timber or Plank, or insufficient Workmanship the same shall be taken out, and replaced at the Builders Expence.

Caulkers ..... the said Yacht to be properly caulked with good and sufficient Oakum, and paid with Resin and Pitch.

Fitting ..... to complete all Shipwrights, Caulkers, Smiths work, to lay the Platforms fore and aft, to build a Forecastle complete, to put all Bulkheads for the Cabins, to find all Plumbers and Glaziers work, as relates to the Hull, the plumbing and glazing of the Cabin excepted, to joiner the Hull of the Vessel in a complete manner, the Corporation finding the Joiners work for the Cabins, the Builder finding all other requisites to make the said Hull in all other respects as complete as can be, and to be directed by the Corporation.

Time of Launching ..... First Springs in April 1820.

Rate per Ton ..... The Rate for building the said Vessel for as many Tons as the foregoing Dimensions give to be £15. 15. per Ton.

Bolts and Fastenings ..... All the Bolts and Fastenings that shall be directed to be of Copper, found by the Corporation of Trinity House, and the Coast of Iron to be deducted from the Rate above specified.

Surveyors ..... And the Said Corporation to have full Liberty to survey the said Vessel during the Building, or to appoint their Surveyor, whose Determination shall be final and that the said Vessel shall be at the risk of the Builder, until delivered safe afloat in Cowes Harbour.

Witness my Hand this Twelfth Day of October, 1819.

THOMAS WHITE.

Witness

Jacob Herbert.

N.B. Payments to be made as follows:

¼ Within Ten Days after Signature of Contract.
¼ When the Floors are in and ribband'd.
¼ When completely skin'd Inside and Outside.
¼ When the Register is obtained.

Jacob Herbert Thomas White.

No. 4

Articles of Agreement made the twentieth day of March in the year of our Lord One Thousand Eight Hundred and Twenty-Eight between Thomas White of Cowes in the Isle of Wight and County of Southampton shipbuilder of the one part and Jacob Herbert Esquire for and on behalf of the Corporation of Trinity House London of the other part. Witness that the said Thomas White shall and will at his yard at Cowes aforesaid at his own proper costs and charges in a good and workmanlike manner build and erect for the said Corporation of Trinity House the Hull or Body of a new Trinity Yacht or Vessel for the service of and use of the said Corporation conformably to all the Articles hereinafter mentioned, that is to say:—

DIMENSIONS

Length from the fore part of the main stem to the after part of the stern post on the Rabbit Line	63′	00″
Extreme Breadth	21′	2″
Depth in the Hold	9′	8″

Admeasurement 119

Room and Space 22″

Keel—To be of beach and in one length sided 8½ Inches, moulded 18 Inches at the fore end 14 Inches aft including false keel.

Stem and *Stern Post* sided 7 Inches—moulded as shown in the drawing.

Apron sided 10 Inches—moulded to the frame.

Dead Wood: to have 4 Inches dead wood on the Keel: 11 Inches wide with sufficient dead wood aft suited to the body.

Floor Timbers: To be sided amidships 7 Inches and moulded 12 Inches in the Throat to graduate forward and aft 6 Inches.

Second Foot Hooks sided 6 Inches throughout. *Third Foot Hooks* and *Top* sided 6 Inches throughout.

Moulding At the floor head 7 Inches and first head 6 Inches—at the Wale 5 Inches—at the Gunwale 4 Inches.

Plank To be full 2 Inches from the Keel to the plank next below the Wales Plank. Next below the Wales 2½ Inches.

Wales To be two shakes of 6 Inches wide and 3½ Inches thick.

Top Sides To be 2 Inches thick—plank sheers 2½ Inches thick.

Beams. To be 3 Feet 6 Inches apart—sided 8 Inches and moulded 6½ Inches—amidships to graduate forward and aft to 6 Inches.

Deck. To be of the best Dantzic Deal 2½ Inches thick.

Water Ways To have solid waterways 9 Inches including the plank sheer 6 Inches moulded.

Shelfs. The Shelf pieces for the Upper Deck Beams to be 4 Inches by 11 Inches wide.

Inside Plank. To have one 3″ Inch plank over the floor heads—one ditto over the first foothook Heads—one 2½ Inch ditto over the second

Heads to be fitted in between with 1¼ Inches plank—below the platform and above with 1 Inch all of African Oak.

Keelson To be 9 Inches sided and 11 Inches moulded, to be left larger sided in wake of the mast step, as usual.

Windlass To be 13 Inches. The Body 8 Feet long, fitted with iron necks and patent palls.

Bowsprit Bitts. To be sided 6½ Inches and 10 Inches fore and aft to run down to the Keelson and to be sufficiently knee'd.

Channels. To be 11 Feet long, 11 Inches wide, 4½ Inches thick, to have four Dead Eyes sufficiently bound with good substantial Chain Plates to secure the shrouds to.

Span Shackle. To have a sufficient span shackle to secure the Bowsprit.

Fastenings. To be completely Copper fastened throughout—to have one Iron hanging knee to each Mast Beam and to the two beams in wake of the Runners and Tackles, the remainder of the Beams to be properly secured to the Shelf pieces which are to be securely bolted to the side.

Quality of Material. The Keel to be of good sound Beech of English growth, the Garboard Strake to be of Elm, the entire frame to be of the best quality African Oak, the bottom planks, wales, topsides, planks, sheers, waterways, shelf pieces, beams, keelson and ceiling planks all of the best African Oak.

Caulker. To be properly caulked with a good and sufficient Oakum, and paid with resin and pitch.

Fittings. To complete all Shipwrights, Caulkers and Smiths Work—to lay the platforms fore and aft, to find all Plumbers and Glaziers works as relate to the Hull—and to Joiner the Hull in a complete manner—also to oil the work all over from time to time as judged necessary.

Winch To fix a good substantial winch to the Mast or Bitts.

Surveyors. And the said Corporation to have full liberty to survey the said vessel during the building or to appoint their Surveyor whose determination shall be final and that the said Vessel shall be at the risk of the Builders until delivered safe afloat in Cowes Harbour.

Instead of treenails for fastening the outside plank, the same to be fastened by Bolts through the timbers and inside plank and clenched—the size of the scantling etc. to be as above stated, subject to such alterations as may be required and suggested by the Honourable Corporation, the Builders finding all materials for building and finishing the Hull with all Iron work necessary for the Hull with all outboard Joiners work, the Hull to be thoroughly Copper fastened, the same to be found by the Corporation, the Builders allowing the price of Iron in lieu—the same to be deducted from the rate per ton. The said Yacht to be built and launched on or before the first Spring Tides in September One Thousand Eight Hundred and Twenty Eight, for which the Honourable Corporation agree to pay the sum of Thirteen Pounds per Ton by the following instalments viz:—

The sum of Five Hundred Pounds when the contract is signed and the sum of Five Hundred Pounds when in full frame and the remainder when the said Yacht is safely launched and completed to the satisfaction of the Corporation. And all such damage or loss as shall or may happen to the Hull or body of the said Yacht or Vessel by fire or any other casualty before she be launched and safe afloat shall be sustained by the said Thomas White his Executors or Administrators and for the true performance of all and every the before mentioned Articles or Agreement, and the said Parties do by these presents bind themselves their Heirs Executors and Administrators the one to the other of them in the penal sum of Five Hundred Pounds of lawful money of Britain.

IN WITNESS whereof the said parties to these presents have interchangably set their hands and seals the day and year above mentioned.

THOMAS WHITE
JACOB HERBERT.

Contributed by Captain W. R. Chaplin

News

The Mariners' Museum

Newport News, Virginia. Two exhibits have recently been arranged at The Mariners' Museum. One, entitled 'Lighthouses and Other Aids to the Mariner' was opened 15 August 1946. This exhibit is comprehensive of lighthouse development from old fire towers, candles, oil lamps of various stages of development, vapor and on to acetylene types of lights. The exhibit consists of models of lighthouses, lightships and tenders, actual lenses, lamps, lights and related material.

An exhibit of 'American Steamships 1807-1946 in Paintings, Models and Related Material' was opened on 12 October 1946 on the occasion of the fall meeting of the Steamship Historical Society of America.

The meeting of the Steamship Historical Society of America included the inspection of the museum and library, business meetings, a visit to the Newport News Shipbuilding and Dry Dock Company and the steamship *America*, and a trip by steamer up the James River to see the 'Idle Fleet' of over 700 vessels moored there. Over 50 members of the Society were present.

Peabody Museum Marine Associates

Salem, Massachusetts. At the quarterly meeting on 28 January 1946 Captain John W. Spiller, USN, spoke on 'Submarines,' and on 22 April Stephen W. Phillips read a paper on 'History of the Development of Navigation for 3000 Years.' The regular monthly meetings were then resumed, and on 27 May Giles M. S. Tod spoke. On 24 June George McIntyre of Essex, Massachusetts, spoke on the Essex shipyards. The speaker at the 22 July meeting was Rear Admiral R. A. Theobald, USN, formerly Commandant of the First Naval District. In August, W. J. Lewis Parker spoke on 'Coal Carrying Coastal Schooners,' and on 23 September Charles H. P. Copeland, Librarian of the Peabody Museum, gave an illustrated talk on 'Canoes of Eastern Papua.'

Notes on Contributors to The American Neptune

Vernon D. Tate, Director of the Division of Photographic Archives and Research of the National Archives, and an Editor of The American Neptune since its foundation, has been appointed Librarian of the Massachusetts Institute of Technology, Cambridge, Massachusetts. Dr. Tate will go to the Institute in January 1947.

Robert S. Chamberlain is attached to the Division of Historical Research, Carnegie Institution of Washington.

David B. Tyler, recently released from active duty in the United States Naval Reserve with the rank of Lieutenant Commander, is now engaged in preparing the historical record of the war-time activities of the Maritime Commission.

Frederick Pease Harlow of Seattle, Washington, is the author of *The Making of a Sailor.*

Donald C. Ringwald is a resident of Kingston, New York.

Marshall Smelser is Assistant Professor of History at the College of St. Thomas, Saint Paul, Minnesota.

Captain W. R. Chaplin is one of the Elder Brethren of Trinity House, London.

Book Reviews

ARMANDO CORTESÃO, ED., *The Suma Oriental of Tomé Pires and the Book of Francisco Rodrigues* (London: Hakluyt Society, 1946). 5½″ x 8¾″, cloth. 2 vols., xcvi + 578 pages, 43 maps and illustrations. Second Series, No. 89 of Hakluyt Society publications; issued for 1944.

The editor of this exceptionally interesting work does not claim too much when he states that it is the most important and complete account of the East produced in the first half of the sixteenth century. This reviewer, at any rate, finds it more enthralling — and infinitely more reliable — than the *Travels* of Marco Polo. Armando Cortesão's scholarly introduction, copious notes and appendices, compare favourably with the high standard set in this respect by Yule and Cordier in their edition of Marco Polo, and should satisfy the most exacting critic, although the editor himself complains that paper shortages and other aftermaths of the war forced him to reduce his original editorial work by approximately two-fifths.

The *Suma Oriental* of Tomé Pires is an account of the East from the Red Sea to Japan, written in Malacca and India in 1512-1515, by the man who, a few years later, went as first properly accredited European Ambassador to China. The *Book* of Francisco Rodrigues is a miscellany containing the Rutter of his voyage in the Red Sea in 1513, and some nautical rules, an almanack, twenty-six maps or charts, and 69 panoramic drawings of various parts of the Sunda islands from Java to Alor as seen from the sea. Both these manuscripts had been bound together at an early date, and belonged to the episcopal family of Osório in Portugal before the codex came into the library of the famous French hydrographer, Comte de Fleurieu (1738-1810) whose *ex-libris* and annotations it bears, and whence it passed to the library of the Chambre des Députés in Paris. Twenty-six of the maps were reproduced by the Visconde de Santarem in his celebrated *Atlas* a century ago, but he did not state where he had found them, so the text and charts lay forgotten until rediscovered by Armando Cortesão in 937. The value of the present edition has been further enhanced by reprinting the original Portuguese text following on the English translation.

Tomé Pires' work is the more important of the two. It is similar to (but far fuller and more informative than) the contemporary *Book* of Duarte Barbosa, written two years later and widely known since its publication by Ramusio, who also printed a very condensed and mutilated version of Pires' *Suma*, in 1550. The Portuguese apothecary (for such was his origin) gives the first really full and reliable account of Malaya, Java, and Sumatra to European readers; since the earlier narratives of Marco Polo, Ludovico de Varthema *et al* are too full of untrustworthy 'travellers' tales' to compete with Pires in this respect. Thanks to his official post in the Factory at Malacca in 1512-1515 and his trip to Java in 1513, he was in an exceptionally favourable position to gather reliable information from the Malays and others fre-

quenting that great maritime mart, and of this position he made full use. His accounts of Java, Sumatra, and pre-Portuguese Malacca are particularly valuable, and form a convincing refutation of those writers who accuse the Portuguese of having been merely illiterate *Conquistadores*, conspicuous for their lack of interest in the Asiatic peoples and civilizations with whom they came into contact. Here for the first time we meet with the name of Japan, under the form *Jampon*, and his account of the Ryukyu Islands is especially interesting to us as having been written at a time when the Portuguese irruption into East Asia started the chain of events which eventually led to the American occupation of Okinawa last year.

As regards the value of Francisco Rodrigues' work, part of it (the nautical rules and some of the maps) may be regarded simply as contributions towards the study of a subject already well documented in contemporary and earlier sources. The Red Sea and South China Sea Rutters (this last in outline form), the twelve maps of the Eastern Archipelago and coasts from Arrakan to China, as also the panoramic drawings of the Sunda Islands are entirely new, and their value and importance are paramount. The six maps representing the Eastern Archipelago constitute the most important part of the *Book*, because they are the first of that part of the world ever drawn by a European as the result of his direct observation. The sequence of panoramic drawings, though comparatively less important, is apparently unique and full of interest. The editor points out that most of the mountains, bays and villages shown can easily be identified by reference to the *Eastern Archipelago Pilot*, vol. II, and quotes the pilot's description of Rusa Linguette, corresponding to Rodrigues' drawing of *Ilha Nusaramgeti*, to prove his point.

Francisco Rodrigues' *Livro* and the *Suma Oriental* of Tomé Pires, written in the same decade, supplement each other to a great extent. Their inclusion in the same codex was as natural as is their publication together in the present edition; nor could a more competent editor have been selected by the Hakluyt Society than the author of the standard work on Portuguese cartography and cartographers of the sixteenth and seventeenth centuries.

LIEUTENANT LAWRENCE A. MARSDEN (SC), USNR, *Attack Transport*. (Minneapolis: University of Minnesota Press, 1946.) 5½″ x 8¼″, cloth, 200 pages, 26 illustrations. $2.50.

Life aboard an APA as experienced by the young naval Supply officer of the USS *Doyen* (APA 1) and told interestingly in a series of well-chosen vignettes. *Doyen* was the Navy's first designed-for-the-purpose Attack Transport for the Amphibious Forces. From his tour of duty in her, Lieutenant Marsden nostalgically recalls and portrays some of his ship's and shipmates' exploits, travels – and idiosyncrasies! (One yarn briefly sketches another farcical detail of the 1943 Aleutian invasion campaign – when Marsden relates that on the very eve of the assault, the uniform-of-the-day for *Doyen* and her landing-craft crews about to storm the Kiska beachhead was suddenly changed to dress blues!)

Although the idea of an especially designed amphibious attack transport was conceived shortly after World War I, *Doyen*, first of the class, was not built and launched for more than twenty years, 9 July 1942. She was fitted out and finally

commissioned on 22 May 1943 — more than ten months later. By contrast, 120 of the Victory-hull class APA's were in commission on Love Day at Okinawa. APA 200, typical of the latter type, was launched on 20 October 1944 and commissioned on Navy Day, 27 October — just seven days later!

HOWARD N. EAVENSON, *Two Early Works on Arctic Exploration by an Anonymous Author* (Pittsburgh: privately printed, 1946). 6″ x 9″, paper. 14 pages.

This privately printed pamphlet is an interesting by-product of the author's search for the papers of Charles Swaine, which was mentioned in query 71 in THE AMERICAN NEPTUNE, VI (1946), 232-233. The works in question are *An Account of a Voyage for the Discovery of a North-West Passage by Hudson's Straights . . . in the Ship* California . . . (London, 1748) and *The Great Probability of a Northwest Passage* (London, 1768), and by careful study of internal textual evidence Mr. Eavenson deduces that both works were written by Charles Swaine, who was associated with Benjamin Franklin and others in organizing two voyages of the schooner *Argo* from Philadelphia in search of a Northwest Passage in 1753 and 1754.

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